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ABSTRACT

A study, investigating the patterns in which Chinese learners of English as a second language (ESL) learn English interrogative structures, focused on four major classes of English questions (yes/no, wh-, alternative, and embedded) categorized into seven structural types. Data came from a test requiring rapid translation of 55 Chinese questions. Hierarchical analysis and searching for transitional patterns were used to determine (1) whether there is an order of difficulty for Chinese individuals learning the structural types of English questions, and (2) if Chinese learners share transitional steps with ESL learners of other language backgrounds. The results reveal a tentative hierarchy: the learning of yes/no questions precedes the learning of wh- questions, which precedes the learning of alternative questions. Two major error types, failure to invert and confusion between the use of auxiliaries "do" and "be," are associated with learners' maturity in English question forms. It is hypothesized that the development of inversion could provide an index for Chinese learning of English questions. Additional patterns were found. The findings suggest that Chinese ESL learners undergo question-learning processes similar to those of ESL learners from other linguistic backgrounds. (Author/MSE)

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A Thesis

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Abstract

About 150 Chinese EFL students participated in an orally administered test requiring the rapid written English translation of 55 Chinese interrogative sentences. The resulting data was used in a cross-sectional study intended to investigate the patterns of learning English interrogative structures by Chinese EFL learners.

The study focussed on the four major classes of English questions (i.e., yes/no questions, wh-questions, alternative questions and embedded questions), which were further categorized into seven structural types. By adopting the method of hierarchical analysis, and the method of searching for the transitional patterns, the data were analysed to determine whether or not there is an order of difficulty for Chinese learners in learning the different structural types of English questions, and to see if Chinese learners share similar transitional steps with ESL learners of other L1 backgrounds in learning English question forms.

The results reveal that there is a tentative hierarchy indicating a general trend: the learning of yes-no questions precedes the learning of wh-questions, which precedes the learning of alternative questions. In

the search for transitional patterns, it was found that two major types of errors--the failure to invert and the confusion between the use of auxiliaries DO and BE as question operators--tend to be associated with the learners' maturity in English question forms. One pattern which emerged suggests that among the different types of structural errors in questions, the proportion of non-inversion errors to other structural errors tends to decrease with the increase of the learners' maturity in producing question forms; therefore, it may be hypothesized that the development of inversion could provide an index for the process of learning English questions by Chinese ESL learners.

It was also found that the ability to invert in forming questions first develops in yes/no questions, then in wh-questions and later in alternative questions. Another interesting finding concerns the interaction between the non-inversion errors and errors reflecting confusion between the use of DO and BE. It appears that a decrease of non-inversion errors is accompanied by an increase of DO vs. BE confusion errors in the three types of questions at certain stages, suggesting that DO vs. BE confusion is a more advanced error type than the non-inversion type. And in each question type, learners tend to undergo two distinctive steps; i.e., first learning to invert and then

gradually paying attention to learning the use of appropriate auxiliaries as operators in questions.

The findings tend to suggest that Chinese EFL learners undergo similar processes in learning the interrogative sturctures of English as do ESL learners of other L1 backgrounds, though there are some slight differences. This tends to contribute to the theories that suggest the existence of some universal processes in the learning of a second language.

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Chapter 1

Introduction

The present study was focussed on the learning of one aspect of English syntax--the interrogative structures of English--by learners of English as a foreign language[1] (hereafter EFL) in China. The chief purposes of the study were twofold:

1) To see if there is an order of difficulty for different structural types of English questions among Chinese EFL learners;

2) To see if there are similarities between Chinese learners and ESL[1] learners of other L1[2] backgrounds in the transitional steps of learning English question forms.

In the field of second language (L2)[2] research, syntax has come to be a major area of study in the past few years (Lightbown, 1984). Like many other studies, the present investigation had its inspiration from the findings and insights of previous research in this area. Among the previous studies, English interrogative structures as an aspect of English syntax has received considerable attention (Ravem,1968,1974; Dulay and Burt, 1977; Wode, 1978; etc.). Earlier investigations have revealed that in the

learning of English yes/no questions and wh-questions, there are certain developmental steps common to ESL learners of different native language backgrounds. Such findings have suggested that ESL learners, irrespective of their different L1 backgrounds, undergo certain universal steps in the learning of English interrogative structures. Dulay and Burt (1977) have also observed that there is an order of acquisition[3] for Spanish- and Keres-speaking children acquiring English wh-questions. All of these have made contributions to the theories suggesting universal processes underlying the learning[3] of a second language.

With millions of people learning English as a foreign language, English has become one of the most popular subject of study in present day China[4]. Whether EFL learners in China undergo similar processes in learning English as compared with English learners from other countries has thus become a stimulating and valuable question of study. The study has attempted to focus on the learning of the interrogative sturctures of English by Chinese EFL learners. This was intended to make some contribution to the research on the learning of English in the Chinese context.

The hypothesis corresponding to the purposes of the study was:

> **The patterns of learning English interrogative structures by Chinese EFL learners is similar to that of ESL/EFL learners of a variety of L1 backgrounds.**

The term "patterns" here refers to both the order of difficulty (For further illustration, see Section 2.1.1. and 2.1.2.) and the transitional steps (See 2.1.2. for further illustration) and will be examined in two ways:

1) By examining the overall order of accuracy of learning the major question types.[5] Previous study on the L2 acquisition of English question forms (Dulay and Burt, 1977) in terms of an acquisition order was only limited to the structures of simple and embedded wh-questions. There is therefore no basis for an overall comparison of the learning orders since this study covers a larger number of structures. It was intended to adopt the same method yet to include more structures of English questions to propose a tentative overall hierarchy for learning the major question types for Chinese EFL learners. The resulting order will be discussed with reference to the acquisition orders implied in previous studies.

2) By examining the transitional steps in learning the major classes[5] of English questions as has been done in previous studies. Tentative comparisons will be made between Chinese learners and learners of other L1 backgrounds to see if Chinese EFL learners undergo similar steps in learning different classes of English questions.

The hypothesis has been based on the following assumptions:

1) That there are steps in learning English interrogative structures in common for ESL/EFL learners irrespective of L1 backgrounds as has been reported in various studies;

2) That the Chinese EFL learners would undergo similar steps as revealed in other ESL/EFL studies in learning English interrogative structures;

3) That while there may be similar steps between Chinese learners and learners of other L1 backgrounds, there may still remain some differences. Therefore, the word "similar" here does not mean the "same";

4) That there may be an order of difficulty for Chinese EFL learners in learning different English question types.

Previous studies on the development of questions have confirmed the hypothesis that both L1 learners and L2 learners with different first

language backgrounds acquire basic interrogative structures of English in much the same way (Ref., Butterworth & Hatch, 1978; Felix, 1981; Huang & Hatch, 1978; Ravem, 1974; etc.). The intention of the present study is to further test these earlier claims through an investigation in the Chinese context. It is thus hoped that this study will make a contribution to the search for universals in L2 learning processes.

The present study consists of six chapters. Chapter 2 presents a review of the literature including studies conducted in the last decade on the learning of Engish interrogative structures. Chapter 3 is the description of the research methodologies and procedures adopted in this cross-sectional research. Chapter 4 reports the results of the investigation. This will be followed by the discussion and interpretation of the results in Chapter 5. Finally, in Chapter 6, the major findings of the investigation will be summarized for conclusions regarding the learning process of Chinese EFL learners. The implications for EFL teaching in China and suggestions for further research will also be included in this chapter.

Notes

1. In language learning research, a distinction is often made between **foreign** and **second** language learning; e.g., **English as a foreign language** (EFL) vs. **English as a second language** (ESL). According to a brief definition given by Littlewood (1984), a **second** language refers to one which "has social functions within the community where it is learnt (e.g., as a lingua franca or as the language of another social group), whereas a **foreign** language is learnt primarily for context outside one's own community"(Littlewood, 1984:2). This distinction is very useful for a discussion of the differences and similarities between the processes of learning a same language for different social functions or under different language learning environments. However, such distinction may not be necessarily maintained throughout the discussion in this thesis. When there was no need to maintain the distinction, the term **second language** was employed as a cover term for both **foreign** and **second** language. (cf. Littlewood, 1984:2-3; Dulay, **et al.**, 1982:10-11.)
2. L1 is short for **first language** while L2 for **second language** in this thesis.

3. In second language research, another distinction is sometimes made between **learning** and **acquisition**. In Littlewood's brief definition, "**learning** refers to conscious processes for internalising a second language, whereas **acquisition** refers to subconscious processes" (Littlewood, 1984:3). However, Littlewood also points out that our knowledge about what is conscious and what is subconscious in second language learning is still too vague for us to use the distinction reliably. It is intended to follow the practice and the term **learning** is therefore used as a cover term to refer to the two types of processes, except when the distinction is crucial to the immediate discussion. But when referring to a child's **first** language, the common convention of using **acquisition** is followed. (cf. Littlewood, 1984:3).
4. Probably, China has the largest population of learners of English as a second or foreign language in the world (Yu, 1984:32). In China today, English is taught as a major subject in secondary schools and, in colleges and universities, it is a minor to students. It is also one of the most widely studied subject in spare-time education, e.g., English evening schools, English courses by radio or television, etc.

5. In the thesis, a distinction is made between **question type** and **question class**. A **question class** refers to one of the major classes of English question , i.e., Yes-no questions, Wh-questions or Alternative questions; while a **question type** refers to one of the structural types of questions under a **question class**, e.g., three structural types of Yes-no questions were studied in the present study (see Section 3.3).

Chapter 2

Literature Review

2.1. Background of Second Language Learning Research

In the field of second language research, the past two decades have witnessed a shift of focus to L2 learners. The interest in the learners grows out of a theoretical revolution in linguistics which began with Noam Chomsky's publication of **Syntactic Structures** in 1957. Chomsky challenged the traditional view of language learning as processes of imitating, memorizing and being rewarded for saying the correct things (cf. Chomsky, 1957, 1959; Dulay **et al.**, 1982). While these processes do have some role in language learning, Chomsky (1965:47-59) argued that the central force is a language-specific "mental structure" or "language acquisition device" that guides the way young children learn and internalize the language they hear around them. According to this theory, language acquisition is a creative process in which children actively organize the speech they hear and make generalization about its structures. This view of the language learning process has inspired a great deal of research for the understanding of L2 learning processes.

In this upsurge of L2 research, much emphasis has been placed on the

learning of syntax in a second language. One of the important issues in the investigation of interlanguage[1] syntax has been the search for uniform patterns of acquisition that apply to all second language learners (D. Brown, 1980:183). In this search of natural processes underlying second language acquisition, researchers have been attempting to answer two major questions, i.e., **Are there developmental sequences of learning? Are there identifiable stages of learning?** (cf. D. Brown, 1980:183). Such research questions have opened up two major areas of research: 1) Research on the order of acquisition ; 2) Research on the patterns of transitional constructions.

2.1.1. Research on the Order of Acquisition

Research on the order of acquisition has been based on the assumption that the acquisition of grammatical structures of a language proceeds in a predictable order. Acquirers of a given language tend to acquire certain grammatical structures earlier than others. This search for the natural order of acquisition started with Roger Brown's study (1973) which reported that children acquiring English as a first language tended to acquire certain grammatical morphemes, or function words, earlier than others. The results led Brown to suggest that "... children work out rules

for the speech they hear, passing from levels of lesser to greater complexity, simply because the human species is programmed at a certain period in its life to operate in this fashion in linguistic input" (1973:105-106).

It was this intriguing picture of the language learning process that led to the initial studies of L2 learning sequences. English is the most studied language as far as the natural order hypothesis is concerned, and of all structures of English, morphology is the most studied. Following Brown's study, Dulay and Burt (1974, 1975) reported that children acquiring English as a second language also show a "natural order" for grammatical morphemes, regardless of their first language backgrounds. The child second language order of acquisition was different from the first language order, but different groups of second language acquirers showed striking similarities. Dulay and Burt's results have been confirmed by a number of investigations (Kessler and Idar, 1977; Fabris, 1978; Makino, 1980, etc.). Fathman (1975) confirmed the reality of the natural order in child second language acquisition with her test of oral production, the SLOPE test. Following Dulay and Burt's work, Bailey, Madden and Krashen (1974) reported a natural order for adult subjects, an order quite similar to that seen in child second language acquisition.

These pioneering works on child and adult second language learning have motivated a great deal of other research on the order of learning the grammatical structures of a second language. The scope of investigation has also extended to some higher level structures of English. For instance, Dulay and Burt (1977) studied the order in which Spanish- and Keres-speaking children acquired English wh-questions.

2.1.2. Research on the Patterns of Transitional Constructions

Another direction of L2 acquisition research has been to focus on the transitional forms in the learning of a second language. Transitional constructions are the language forms learners use while they are still learning the grammar of a language. While studies focussing on the natural order of language acquisition show only the order in which mature, or well-formed structures emerge, research on transitional constructions attempted to reveal the path learners take en route to mastery. Much of the work in this aspect of second language acquisition has involved comparing the grammatical constructions used by second language learners with those made by young children acquiring their first language. Such comparison has also been extended to groups of L2 learners with different first language backgrounds. Researchers in this field have found

that many errors in transitional constructions produced by second language learners bore no relation to their native language and that L1 and L2 learners of a same language go through a number of similar stages in learning the structures of the language (cf. Dulay, **et al.**, 1982:121-136).

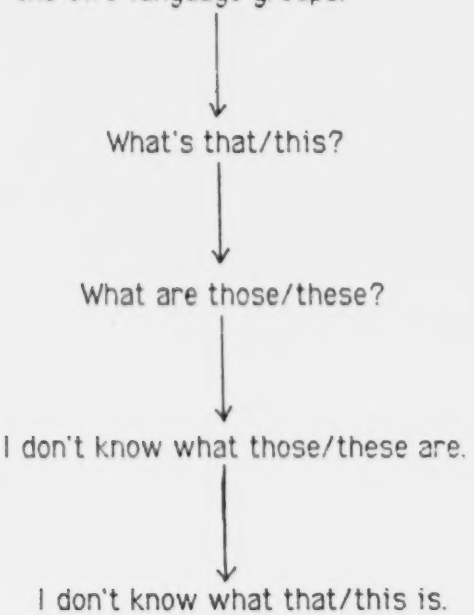
Among the structural types studied so far are English negation, wh-questions, yes/no questions, embedded wh-questions, and reflexive pronouns, etc. The learners' first languages include Norwegian, Japanese, Spanish, Arabic, German and Keres (Dulay, **et al.**, 1982:122). The observations on the learners' transitional constructions comprised one of the first indications of the existence of universal mental mechanisms involved in the learning of a second language (Dulay, **et al.**,1982:122). This is thought to reflect the operation of the natural language acquisition process that is part of all of us (Krashen, 1982:15).

So far, this sketch of L2 acquisition research may have enabled us to see the position of research on L2 learning of English interrogative structures. Thus the following sections will focus on a review of past studies on the learning of English interrogative structures.

2.2 Research on the Learning of English Interrogative Structures

2.2.1. Study on the Acquisition of English Interrogative Structures in Terms of Acquisition Order

In the search for the order of L2 acquisition, there is also research focussing on the learning sequence of the English interrogative structures. Using both structural and unstructured conversation techniques, Dulay and Burt (1977) studied the order in which Spanish- and Keres-speaking children acquired simple and embedded wh-questions. By adopting the hierarchical method of analysis, their results revealed the following order of acquisition for the two language groups:



(cf. Dulay, et al., 1982:214)

"↓" indicates that the acquisition of the structure at the top of the arrow

precedes the acquisition of the one at the bottom.

The acquisition order illustrates that the correct form of simple wh-questions precedes their correct form in embedded contexts, in which the simple questions must take on an uninverted form. It is interesting that although "What's that?" is learned before "What are those/these?" the two structures are shown to be in the reverse order in embedded contexts. It was suggested that "What's that?" was learned as one vocabulary word at first (as opposed to "What are those?") making it difficult for the learner to segment it appropriately when required to do so (Dulay, et al., 1982:214-215).

2.2.2. Research on the Learning of English Questions in Terms of Transitional Patterns

2.2.2.1. Research on Transitional Question Forms in L1 Acquisition

Interest in the studies of the development of interrogative structures in L1 acquisition was once motivated by the desire to see whether the acquisition sequence reflected the rules presented in a transformational analysis of adult English grammar. The transfromational rules for wh-questions (who, what, where, when, how) can be summarized as follows:

1.Base, can be exemplified by the sentence:

He - is - going - where (some place)

2. Preposing:

Where - he - is - going (wh-word is moved to the front of the string)

3. Inversion:

Where - is - he - going? (Auxiliary is moved in front of the subject)

(cf. Cancino, **et al.**, 1978:219)

Brown (1968) hypothesized the existence of both the base form and the preposed form in the early development of children's interrogatives. On the basis of his longitudinal study of the development of English wh-questions in the speech of three children, he found realizations of the second derivation involving preposing without inversion though there was no evidence for the base form in his subjects' speech. Such evidence led him to suggest that "children in preschool years do develop a grammatical structure underlying wh-questions that is much like the structure described in current transformational grammar"(1968).

In an earlier report on the acquisition of English questions, Klima and Bellugi (1966) claimed that three L1 children who were at approximately the same stage of language development underwent three developmental

stages in the acquisition of English interrogation which could be summarized as follows:

Stage I

Yes/no questions:

Intonation questions without inversion, no do-support.

Wh-questions:

No inversion, no do-support.

Stage II

Yes/no questions:

Still intonation questions without inversion.

Wh-questions:

Influx of verbs and some auxiliaries plus modals (will, can) but still no inversion.

Stage III

Yes/no questions:

Adult-like inversion.

Wh-questions:

No inversion.

(cf., Klima and Bellugi, 1966)

Based on the results of Klima and Bellugi's (1966) report, we can see that there is a gradual increase in inversion first in yes/no questions and later extended to wh-questions among their subjects. Results from these studies have suggested a developmental sequence in which learners gradually develop from non-inversion to adult-like inversion in English questions. It has been claimed that inversion tend to increase at a different rate between different question forms, with a gradual increase of inversion first in yes/no questions and later extended to wh-questions (cf. Dulay, **et al**. 1982:132). It has also been suggested that such developmental patterns are the results of certain operating principles (Slobin, 1973) children bring to language (cf., Clark and Clark, 1977:354). Such previous research in L1 acquisition of English interrogative structures has indicated that the major concern of study is to search for a universal process underlying L1 development of question forms.

2.2.2.2. Research on transitional question forms in L2 acquisition

In the second language acquisition literature, much work has involved comparing the developmental sequence in learning English interrogative structures with the results revealed in previous L1 acquisition research. For instance Ravem (1968,1974) studied the acquisition of English by two

Norwegian children. He found preposing without inversion in wh-questions, thus reflecting Brown's (1968) results.

Based on the previous findings in the acquisition of English interrogation, Cancino, Rosansky and Schumann (1978) conducted further research in this area with an observation-longitudinal study of the acquisition of English as a second language by six Spanish speakers, two children, two adolescents and two adults. Their major interest was also in the development of inversion. The results showed that the development of the interrogatives seems to unfold in this way: both yes/no and wh-questions appear in the uninverted form, but there is no stage in which the uninverted form consistently appears and the inverted is not present. The results also yielded a developmental sequence in the acquisition of wh-questions and yes/no questions.

In wh-questions, the following sequence emerged:

Stage I--Undifferentiation: learner does not distinguish between simple and embedded wh-questions.

a) Uninverted--both simple and embedded questions are uninverted

b) Variable inversion--simple wh-questions are sometimes inverted and sometimes not.

c) Generalization--increasing inversion in wh-questions with inversion being extended to embedded questions.

Stage II--Differentiation: learner distinguishes between simple and embedded wh-questions, reaching criterion inversion (80 %) in simple wh-questions and uninversion in embedded wh-questions.

In yes/no questions an acquisition sequence was also observable after the exclusion of the early do inversion (considered to be an "inversion look" construction):

i) Sentence with rising intonation.

ii) Some inversion, gradually increasing, but with variability from session to session.

(cf. Cancino, et al., 1978)

So far, the major concern of L2 acquisition research has been on the similarity between L1 and L2 acquisition. As has been shown, most L2 acquisition studies have suggested that similar developmental sequence holds for the acquisition of the interrogative structures irrespective of whether English is acquired as L1 or L2. This tends to suggest that in certain respect, L1 and L2 learners of the same language would undergo similar learning processes. However, Wode (1978) set out to focus on the differences with a comparative study of the developmental sequence for

English interrogation of 4 German ESL learners with other reports of L1 and L2 acquisition (especially that of Klima and Bellugi, 1966, and Huang, 1978). Though his data showed that there were parallels in the development of English interrogative structures, there were also some differences. For instance, he pointed out that the L2 structural type with inverted full verb has so far been found only for L2 English/L1 German and L2 English/L1 Norwegian. He suggested that this correlates with the fact that in these languages inversion applies to all verbs no matter whether main verb or auxiliary. He thus concluded that reliance on L1 is an integral part of L2 acquisition and the L2 developmental sequences for learners of different L1 backgrounds vary systematically as a result of the L1 structures previously acquired. This seems to stress that while looking for the regularities governing the L1 and L2 acquisition of the same language, we should not ignore the reliance of L2 learners on their mother tongue in the new language learning task.

2.2.2.3. Research on question formation in learning English as a foreign language

Compared with the research on L1 and L2 acquisition, studies on the learning of English interrogative structures by learners of English as

foreign language are sparse. Felix (1981) included the learning of English interrogative structures in an investigation of the learning processes of German learners learning English only during classroom hours. He found that the students' utterances showed many structural features which are also known to characterize L1 and L2 naturalistic acquisition. The data on the development of questions confirmed the hypothesis that both L1 learners and L2 learners with different first language backgrounds acquire the basic interrogative structures of English in much the same way. He also found among his subjects that the earliest yes/no questions were all intonation questions formed on the basis of simple copula structures without inversion. While the students learned fairly soon to apply the inversion transformation correctly to yes/no questions, the earliest instances of wh-questions lacked inversion.

The result of Felix's study led to the conclusion that the way people learn a second language does not totally depend on the conditions under which they have been exposed to language data. The findings tend to suggest that there is a universal and common set of principles underlying language learning irrespective of whether a language is learned as a first language, second language or foreign language as a result of the processes

that constitute the natural ability of human beings to learn languages (Felix, 1981).

Other studies[2] have investigated the learning of English yes/no questions and wh-questions by Arab EFL learners (Mukattash, 1980,1981). The reports mainly focussed on the analysis of the sources of the learners' errors in the English question forms, with results showing that most of the errors made by the Arab students were shared by children acquiring English as L1 and L2 learners of other language backgrounds.

2.3. Analytical Methods

The above review of literature shows that the two major approaches adopted in the research of the learning of English interrogative structures are:

1) The search for an order of acquisition; and

2) The comparison of the transitional constructions in L1 and L2 acquisition.

In both approaches researchers have been attempting to identify the processes involved in the learning of English interrogative structures. The following sections will provide a brief account of the methodologies.

2.3.1. The Search for an Order of Acquisition Through Hierarchical analysis: the Ordering-Theoretic Method

In the published literature, the term "acquistion order" encompasses two types of orders: (1) sequences and (2) hierarchies. Acquisition sequences refer to a linear order of acquired structures. Such an order tends to show that one single structure is acquired after the other. Acquisition hierarchies, on the other hand, refer to groups of structures acquired in a certain order during the acquisition process (Burt and Dulay, 1980:266-267).

These two types of orders are the results of two kinds of analysis available for the determination of acquisition orders; i.e., rank order analysis resulting in a linear acquisition sequence and hierarchical analysis resulting in an acquisition hierarchy. Rank order implies an additive explanation of the learning process, suggesting that one single structure is learned before another structure, which may not be the case in real-life situations (Dulay, et al., 1982). To remedy the weakness of rank orders in determining L2 acquisition orders, Dulay and Burt (1974) used the Ordering-Theoretic Method (Bart and Krus, 1973) to arrive at an acquisition hierarchy for groups of functors.

The Ordering-Theoretic Method, also known as the "tree method" or the "hierarchical method", permits one to identify groups of structures--though there may still be single structures appearing in the hierarchy[3]--which are acquired at roughly the same time, and to determine the order in which each group is acquired. It enables researchers to uncover relationships among groups of structures that had not been observed by previous rank order methodology (Dulay, et al., 1982). To the extent that language acquisition is a process of acquiring groups of structures rather than one structure at a time, Dulay, et al. (1982) suggested that the method could be the most appropriate method of

analysis available for cross-sectional research. Therefore, the present study attempts to adopt this method for determining a hierarchy of English interrogative structures for the Chinese EFL learners. (For a detail description of the method, see Chapter 3.)

2.3.2. Method in transitional form research

In describing learners' transitional constructions, researchers often refer to "stages", "levels" or "steps" of language development. Learners are said to be at an early, intermediate or advanced level of language development. Implicit in such terms is the notion that certain characteristics of each level are unique and irreversible (Dulay, **et al.**, 1982).

To describe stages of L2 development, one of the criteria is the use of certain transitional constructions by the learners (Dulay and Burt, 1978). Such a criterion describes the kind of linguistic knowledge the learner is said to have at some level of proficiency. Certain steps in the L2 acquisition process have been characterized by the occurrence of certain transitional constructions.

Such a description of the steps in L2 development is usually followed by the comparison of the grammatical construction used by second

language learners with those made by young children acquiring their first language. Similarities between L1 and L2 developmental steps[4] have been considered to contribute to the understanding of the learning processes in the same language, thus permitting L2 teaching and learning to draw on the theorectical advances that have been made to describe the learning processes.

2.4. Summary

The literature of the studies in the learning of English interrogative structures shows that investigations among L2 learners have focussed on two major perspectives; i.e., the search for an order of acquisition and the search for some transitional steps in the learning process. With this literature in mind, the data in this study will be examined (for a detail description of the subjects, test and data, see Chapter 3) by asking the following questions:

1) Is there a learning hierarchy of English interrogative structures for Chinese EFL learners?

2) Do Chinese EFL learners follow certain transitional steps in the kinds of constructions they produce in learning English questions?

3) Do Chinese EFL learners share certain similar steps with L2 learners of other L1 backgrounds in the learning of English interrogative structures?

Notes

1. The term **interlanguage** was first coined by Selinker(1972) to refer to the separateness of a second language learner's system, which has a structuarlly intermediate status between the native and the target language. (cf. D. Brown, 1982:163.)
2. These studies (especially that of Makattash, 1980, 1981) have not been reviewed in detail in this Chapter since they seemed to focus on a direction other than the search for the transitional patterns. To mention briefly such studies may be enough for us to see that considerable attention has also been paid to the research in the learning of English interrogative structures among EFL learners.
3. According to Bart and Krus (1973:298), learning hierarchies, item hierarchies, behavioural sequences, cognitive stages theories, etc., could all be studied with the ordering-theorectic method. To the present researcher's understanding, one of the most essential point of this method is its effort to determine logical relationships between items represented in the item response matrix. Though this enables researchers to uncover relationships among groups of structures that had not been observed by linear order methodology, it does not

necessarily rule out the possible occurrence of single structures in the hierarchy (cf. Bart and Krus, 1973).

4. In the research literature, the terms **stage, level,** or **step** have been used to discuss language development. For the sake of consistency in reference, the term **step** is more often used in the discussion in this thesis. Terms such as **stage** or **level** may also be used if they become necessary.

Chapter 3

Methodology

3.1. Rationale

To meet the purposes of the present study, it was planned to use a cross-sectional design to collect language data from Chinese students learning English as a foreign language in China. This was done through a translation test used to elicit the English grammatical constructions investigated in this study.

Dulay **et al.** (1982:246) pointed out that cross-sectional design in L2 research can stimulate actual L2 development over time by including many learners who are at different stages of L2 development. In a study that examine the validity of cross-sectional morpheme order studies, Fathman (1979) suggested that morpheme rank ordering using cross-sectional data and based on instrument illicited speech can be a valid method of analysis. Therefore, the present study was attempted to base on cross-sectional data.

In the field of L2 research, error analysis has been developed as a way to investigate the process of second language learning. Transitional errors have been used to explain how language learners approach the task of

learning the target language. However, collecting data to reveal specific grammatical constructions from foreign learners of English is very difficult. This is due to the fact that some speakers may use the strategy of avoidance and produce what they are sure of in their attempts at speaking the target language while some speakers may make more errors than others (cf. Schachter, 1974). Thus, it is difficult to compare the proficiency of various speakers when there is no control over the speakers' linguistic production. This will also make it difficult to draw conclusions over the development of learners' language when a large sample of learners is investigated in research.

In order to remedy this methodological problem of experimentation, Corder (1973) has suggested an elicitation procedure which requires direct translation from the native language to the target language. Such a procedure "causes a learner to make a judgment about the grammatical acceptability of a form or provokes him into generating a linguistic response" (Corder, 1981:61). He also suggested that the learners' judgments and responses can only be based upon the grammar of his interlanguage (1981:61). Therefore, by forcing a subject to form a structure which he has not completely mastered, the researcher can gain insights into how the subject understands the language to operate and

how he organizes new syntactic structures in his interlanguage (cf.,Taylor, 1975b).

The use of a translation test to elicit interlanguage data has proven successful in a number of studies investigating the learning of English syntax (See Taylor,1975b; Ravem,1968; Butterworth and Hatch,1978; etc.). Translation tests used in these studies have also included the elicitation of English interrogative sentences.

In view of the above rationale and the success of using translation tests in previous L2 studies, the present research has also chosen to use a translation test to investigate the construction of English interrogative sentences from Chinese EFL learners. However, another reason for having chosen a translation test is basically an economical one. Since the data had to be collected from EFL learners in China, the researcher had to get permission to cross the border into mainland China for the necessary data; this was accompanied by quite a few procedural applications and arrangements. With the time and conditions available for data collection, a translation test which would take the subjects a relatively short period of time appeared to be the most effective and practical technique for collecting the data for this study. Of course, a translation test would also

require the control of instruments , timing and other procedures. This will be further illustrated in the following sections.

3.2. Subjects

The subjects of the study were all elementary learners of English in schools or training courses affiliated to the Guangzhou Institute of Foreign Languages (hereafter GIFL)[1]. Their age ranged from 16-35.

In order to select subjects representing different stages of development in English question forms, an attempt was made to cover a wider range of English learners. Therefore, the subjects turned out to include three groups of English learners from different English programs.

The first group consisted of 85 high school students who joined a two-week preparatory course for college entrance examination in the following summer sponsored by the secondary school affiliated to GIFL in February , 1985. Most of the students were would-be high school graduates planning to enter colleges or universities as students of English. Their proficiency in English was probably above the average level for high school students in China[2] as most of them planned to major in English in universities. The second group of subjects composed of 25 students in a training course sponsored by the English Department of GIFL for local

government offices or enterprise employees who were required to have a mastery of basic English. The last group was made up of 40 night school students in an English class sponsored by GIFL as a kind of adult education.

The English proficiency levels[3] of the last two groups, particularly of the third group, were a bit lower than the first group. But it was certain that all the students were taught the interrogative structures of English which were investigated in the study. According to their English syllabi, the interrogative structures (including embedded wh-questions) would be covered in the first year of teaching. All the students had at least two to three years experience of learning English with at least 4-8 hours classroom work every week. Some even had 4-5 years of learning experience. Most of the students were only exposed to English during classroom hours. It was unlikely that they had any practice of English oustside the classroom except for some home assignments or a bit home reading of textbooks or some simple English reading materials. Although the students appeared to represent different levels of development in English question forms, the assignment of the students into different groups for this study did not rely on these natural groups but rather on their scores on the translation task (For rationale,see section 3.5.3. and Note 3).

3.3. Instrument

The present study on the learning of English interrogative structures was based on a translation task for the purpose of eliciting English interrogative structures from the Chinese learners. Such a task, therefore, required the description of English interrogative structures and selection of materials to reflect the structures. The following is a description of the testing materials.

In real life situations, the act of questioning can be realized in quite a few ways; e.g., through gestures, intonations or syntactically marked utterances, etc. In this study, the term **question** was restricted to those sentences that were syntactically marked; i.e., those which carry syntactic features for interrogation . For the sake of consistency in reference, the study followed Quirk, **et al.**'s (1972) classification of questions in which they divided English questions into three major classes according to the types of answers one would expect:

(1) Those that expect only affirmation or rejection (as in "Have you finished the book?") are **yes/no questions**;

(2) Those that expect a reply supplying an item of information (as in "What is your name?") are **wh-questions**;

(3) Those that expect as the reply one of two or more options presented in the question are **alternative** questions;

e.g., "Would you like to go for a walk or stay at home?"

(Quirk, **et al.**, 1972)

However, another type of "question", which is described by Quirk, **et al.** (1972) as an interrogative clause but treated as an "embedded question" in Dulay (1982) and other studies, was also included in the study. Such a construction is of special interest in L2 research because it requires the learners not to apply rules which they have already learned as applying in simple questions--the auxiliary inversion and do-insertion rules. For instance, when questions are embedded in phrases such as "I don't know", there is no inversion required in the interrogative clause; e.g., "I don't know why he was late." Research in the past has shown the overapplication of the inversion rule resulting in ungrammatical sentences like "*we don't know why was she late." Such phenomena have been investigated to reveal some characteristic steps in L2 development (Dulay and Burt, 1977); they have also been included in the present study.

In English the rules for forming a question (e.g., in a Yes-no question or in an Alternative question) involve the inversion of copula, and auxiliary (e.g. be, have, can,etc.) and the insertion of auxiliary DO in sentences

where there is no auxiliary attached to the full verb. In a Wh-question, except for the fronting of the wh-word, the same inversion rule holds in the question. (For convenience of reference, the term **inversion** will be used as a cover term in this thesis for the syntactic features of inversion and insertion except when a distinction between the two features becomes necessary.) It has also been observed that the use of an appropriate auxiliary as an operator is also crucial in a syntactically mature question. Therefore, the four major classes of English questions can be further categorized into different structural types according to the different types of operators used in the questions. The major structural types that were investigated in the study are as follows:

I. Yes/no questions:

1) Copula as operator in yes/no question [or abbr. **Yes-no Q (Cop/Have)**].

Copula + Sub(ject) X ? (X stands for the rest of the sentence)

e.g., "Are you a student of English?"

2) No auxiliary present in the positive declarative sentence;

DO inserted as operator [or abbr. **Yes-no Q (DO)**].

DO + Subj + V X ?

e.g.,"Do you like to speak English with foreigners?"

3) Aspect auxiliary (cf. Quirk, et al., 1972:80-81) present in the positive declarative sentence; The auxiliary used as operator [or abbr. Yes-no Q (Aux)].

Aux + Subj + V X ?

e.g., "Is he talking with his brother?"

II. Wh-questions:

4) Copula as operator in wh-questions [or abbr. Wh-Q (Cop)].

Wh-word + cop + Subj X ?

e.g., "How is your father?"

5) Auxiliary DO as operator in wh-questions [or abbr. Wh-Q (DO)].

Wh-word + DO + Subj + V X ?

e.g., "Why did you come back so early?"

III. Alternative questions:

6) Alternative questions that resemble a yes/no question [or abbr. ALT-Q].

Aux + Subj + V + (Object) + or X ?

e.g., "Are you coming or not tomorrow?"

"Do you prefer coffee or tea?"

IV. Embedded questions:

7) a) Embedded yes/no questions [or abbr. EMB-Q]

Main clause + if (whether) + Subj + v X.

e.g., "I don't know whether he is an American or not."

b) Embedded wh-questions.

Main clause + wh-word + Subj + v X.

e.g., "I don't know why he works so hard."

Though there are questions of other structural types[4], the study has focussed on the above seven types of interrogative structures. The description of the interrogative structures yielded 55 sentences to represent the interrogative structures(see Appendix I). These sentences were first translated into Chinese and presented in a pilot study among some 25 Chinese students of English to test if the Chinese sentences could be translated back into appropriate English structures. The pilot study helped to predict the result of the elicitation procedures and thus provided the basis for the final translation test for the subjects of the study (see Appendix II).

3.4. Data Collection Procedures

The translation task required the written English translation of 59 Chinese sentences[5] administered to the students to investigate their production of different English question forms. In the task, each sentence was heard only once, followed by a pause of 28-30 seconds during which time the subjects were asked to write the translation of the sentence in correct English. It was assumed that the control of timing would limit the subjects' use of mornitoring and thus allow the elicitation of immediate, first impression responses. If the subjects had not mastered the syntax of the structures, their responses would contain interlingual errors that might reflect the development of their language systems over time.

The reason why the subjects were asked to respond in writing rather than in speech was that oral responses might be marked with numerous false starts, hesitations, and other performance variables, which could constitute difficulties for analysing the data from a large number of subjects. While it might be argued that writing is a different kind of activity from speaking, the stimulus sentences were sufficiently straightfoward to suggest that identical abilities would be tested regardless of the mode used; i.e., whether it is a written or a spoken task. The stimulus sentences contained only common vocabulary which the

subjects could be expected to know; therefore, the task put emphasis on syntactic rather than lexical translation. In addition, the subjects were told in advance that both spelling and vocabulary were unimportant in the translation. They could also write a dash in place of any English word they did not know.

In order to ensure equal timing of pause after each sentence and to control the pace in different classes, the task was pre-recorded on tape. The subjects were then asked to translate sentences from a tape played to a whole class at once. They were also required to take the test seriously in order to gain a true reflection of their syntactic ability in forming English questions. The testing time was relatively short (approximately 30 minutes) to minimize fatigue which might affect the subjects' mental abilities. The data collection was quite successful since most of the subjects attempted all the sentences.

Since the test was administered to three groups of students, it had to be done at three different times. Although there were 3 administrations of the test, measures were taken to ensure confidentiality of the test items. This provided each subject with equal conditions for taking the test.

3.5. Data Analysis

3.5.1. Description of the data

The translation test orally administered to three groups of Chinese EFL students resulted in a collection of 149 written translation papers. Due to certain technical problems (e.g., some subjects left too many unattempted items which made it difficult to score the paper), 139 papers were selected as the data base for the study; and these 139 papers, each of which contain 55 English interrogative sentences directly translated from Chinese, yielded a corpus of 7,645 English interrogative sentences for analysis.

In the present study, the data were used for two purposes. Firstly, the data was processed in terms of a disconfirmatory matrix which was used to propose a hierarchy for English interrogative structures in the Chinese learners' process of learning English as a foreign language. Secondly, the same data were also examined in order to suggest some characteristic steps of Chinese learners in learning English interrogative structures. Hence, the first step in the analysis of these data was to do an error analysis and to quantify the results to form the basis for statistical analysis.

In the error analysis that followed, each of the sentences from the corpus was examined, marked and checked only for violations of the syntactic rules for forming questions (as described in Section 3.3). Deviation from the choice of vocabulary was ignored in the analysis. Also, if a subject did not attempt a sentence or if the sentence deviated from the structure the test intended to elicit[6], the sentence was treated as an omitted item, which was later excluded from the statistical count. (See Section 3.5.2.2. & 3.5.3. for a detailed description of the data analysis procedures.) This primary analysis of the data was a prerequisite for the statistical analysis phase.

3.5.2. Hierarchical Analysis

3.5.2.1. General Description

Most central to the hierarchical method is that it attempts to look for groups of structures that are learned together and that are ordered. The method assumes that there is a logical relationship among items, and it is designed to determine those relationships. The relationship worked out in the version of the method presented here is that "X is a prerequisite to Y", or to put it more simply, "Structure X is learned before structure Y" (Bart and Krus, 1973).

In order for the method to be used to score interrelated items, binary coding is necessary; that is, the structural items must be scorable as correct or incorrect with values of "1" or "0", respectively. Accordingly, a "1" is given to the structure if it has been acquired, and a "0" if it has not been acquired (Dulay, **et al.**, 1982).

In Dulay and Burt's (1974:45-46) studies, a structure was considered acquired if it was used 90% correctly given in at least 3 obligatory occasions per subject for a given structure. Thus, if a subject scored 90% or higher on a given structure, he received a "1" for that structure, but if he scored 89% or less he received a "0" for that structure.

Then the pattern of responses for each subject was determined for every ordered pair of structures. The possible response patterns for each pair of structures could be:

1,1 Both structures have been acquired.

1.0 The first named structure has been acquired; the second has not.

0,1 The first named structure has not been acquired; the second structure has been acquired.

0,0 Neither structure has been acquired.

In order to form the hierarchy, one has to determine which pairs of structures consistently exhibit the 1,0 pattern across subjects (denoting

that the first structure of a pair has been acquired but not the second). The occurrence of the opposite pattern (0,1) is called a disconfirming case. The requirment for positing a relationship between a set of items, say the learning structure X before structure Y, is that the percentage of disconfirming case of a pair must be sufficiently small. If there are more than a tolerable number of disconfirming responses patterns for a pair, the relationship would not hold (Dulay, et al., 1982). Therefore, the hierarchical method set out to determine the percentage of disconfirming cases for all possible ordered pairs of structures and the results would be presented in a confirmation matrix (see Section 4.1. for illustration). From such a matrix, a tree can be constructed with arrows from one structure to another designating the relationship between the structure and thus reflect a hierarchy for the learning of the structures (see Fig. 1 for further illustration).

3.5.2.2. Analytical Procedures Adopted in the Study

In the present study, the data are the result of a translation test of 55 interrogative sentences which reflected 7 major types of English interrogative structures. The quantification and computation of the data

according to the hierarchical method has involved nine steps, the first of which is:

Analytical Step 1:

> **To each sentence which reflects the structure under investigation, give one score** (i.e., **0, 1** or **2**) **for the degree of accuracy in terms of obligatory context for the interrogative structure** (see Appendix IV).

This description may require an account of some basic concepts and the detailed procedures involved before we go on to other analytical steps (for Analytical Step 2-9, go to p.52).

Obligatory context. Scoring each sentence involves, first of all, the concept of obligatory occasions and a definition of the contexts for the structures investigated. Dulay, Burt and Krashen (1982) pointed out that the concept of "obligatory occasions" introduced by Roger Brown (1973) for L1 research is also central to computing L2 acquisition orders. Although the present data is different from the data collected from natural discourse, it is assumed that the concept of obligatory contexts is also essential and applicable to the present data realized in isolated sentences. For instance, when a subject attempts to produce an interrogative sentence, usually marked by a question mark [?] at the end

of a sentence, he has already created the contexts where certain structural rules should be required in the sentence. Such a context for a specific structure can be referred to as an obligatory context or an obligatory occasion.

In forming an English interrogative sentence, the most salient features are the auxiliary (or copula) inversion and the auxiliary DO insertion rules; i.e., in a statement where an auxiliary is present, the auxiliary (or copula) must exchange places with the subject noun phrase, and in a statement where only a full verb is present (except the copula), DO is inserted in sentence initial position to help form a question, e.g.,

Statement: He is a student of English.

auxiliary inversion: Is he a student of English?

Statement: He works hard.

Do insertion: Does he work hard?

However, in Wh-questions, a speaker must first of all place a wh-word (what, why, who, where, when, how) before the rest of the question and then apply the inversion rule or the insertion rule. In addition to the above general rules, question formation in English also requires the proper use of certain auxiliaries in interrogative sentences, i.e., the use of an appropriate auxiliary as a question operator. Given that question formation

in English requires the coordination of the above several kinds of knowledge, various things may be overlooked by beginning learners:

1. Learners may not have learned to invert the auxiliary with the subject noun phrase; e.g., *Why she is so happy?

2. Learners may not have inserted DO , where no auxiliary is available for inversion in the sentence; e.g., *Where he went last summer?"

3. Learners may not have learned the proper use of some of the auxiliaries; e.g., *Do I taller than he?

4. Learners may not have learned some of the auxiliaries, resulting in the deletion of certain auxiliaries in the question; e.g., *Why he so happy?

On account of the above common errors in learners' English, it is assumed that when learners produce the sentences, they will create obligatory contexts for the structures in the sentences, but they may not furnish the required forms as has been mentioned above. Treating each obligatory occasion for a syntactic structure as a "test item", each item was scored as follows:

For Yes-no questions, Wh-questions and Alternative questions:

No auxiliary inversion or no Do insertion = 0

e.g.,*He is your friend?

*You like to speak English?

*Where the bus stop is?

*Who you gave the letter?

*You like coffee or tea?

Auxiliary inversion and Do insertion present but misformed auxiliary supplied = 1

e.g., *Does he your best friend?

*Are you like to speak English?

*Why were you come back early?

*Are you like coffee or tea?

Correct interrogative sentence = 2

e.g., Is he your best friend?

Where is the bus stop?

Do you like coffee or tea?

For Embedded Wh-questions:

Over utilization of inversion rule =0

e.g., *I don't know is he an American.

Wrong auxiliary or redundant auxiliary supplied =1

e.g., *I don't know why he do work hard.

Correct sentence =2

e.g., I don' know why he works so hard.

(For more details about the data, see Appendix VII.)

The rationale for classifying the sentences into three degrees of accuracy is based on the assumption that, in forming an English interogative sentence, the most essential rule is that of inversion. Therefore, if a subject failed to apply the rule in a question, he was considered to have failed the task. The use of an appropriate auxiliary as an operator in a question is also important. However, when a subject succeeded in applying the rule of inversion or insertion but failed to use a correct auxiliary in forming a question, it was assumed that he might have learned "half" of the structural rules required in a question. Therefore, half credit, "1", was given to it. This principle of scoring was also applied to Wh-questions and Alternative questions. It may be argued that the fronting of a wh-word in a wh-question should also be given credit. But it has been reported in various studies (especially in Brown, 1973) that, among L1 and L2 learners, cases showing the failure in wh-word fronting were very rare. Therefore it was assumed that wh-word fronting did not constitute a problem to L2 learners even at the very early stages. Thus, there was no credit given to it in the analysis.

The results of this first analytical step formed the basis for the following analytical steps:

Analytical Step II:

Group under each structure type no less than three sentences (See Section 3.5.2.1. for rationale) for each subject (see Appendix V).

Analytical Step III:

Calculate the group mean score using Dulay and Burt's Group Mean Method[7] for each structural type to yield the percentage of accuracy for each subject (See Appendix V).

Analytical Step IV:

Assign a binary value to a structural type for each subject; e.g. "1" given for a structure type which is used over 90% correctly in at least three obligatory occasions, "0" for a score of 89% or less (see Appendix V).

Analytical Step V:

For each structural pair, count the number of students who received scores for both structures in the pair.

Analytical Step VI:

Count the number of students whose response patterns disconfirm a relationship between each possible pair of structures; that is, in the relation "structure X precedes structure Y", the disconfirming pattern would be structure X = 0 (not learned) and structure Y = 1 (learned), or "0,1".

Analytical Step VII:

Calculate the percentage of disconfirmatory response patterns for each relationship tested; that is, for each structural pair divide the number yielded in Step VI by the number yielded in Step V. The resulting number is the per cent of disconfirmatory response patterns for a given relationship.

Analytical Step VIII:

Use the percentage number for each pair to construct a disconfirmation matrix for tree analysis. The matix in Table 1 (see Chapter 4) illustrates this analysis. In the matrix, for each structural pair, the relationship tested is: "the structure designated by the row is learned before the structure designated by the column". In the present analysis,if the per cent of disconfirmatory response pattern is 7% or less (for rationale, see Section 3.5.2.1.) the relationship holds.

Analytical Step IX:

From the matrix, build a "tree" (see Appendix VI). Arrows from one structure to another designate the relationship between those structure.

With the above nine analytical steps, we have come to a set of relationships between the structural items tested in the investigation (see Fig. 1 in Chapter 4). The results will be presented in Chapter 4.

3.5.3. Analysis of Transitional Constructions

As has been shown in the review of literature, previous studies on the learning of English questions have attempted to describe learners' transitional constructions in terms of "stages" or "steps". Such attempts have been intended to study the linguistic characteristics of learner speech in each stage to identify its uniqueness and thereby piece together the developmental process (Dulay,**et al.**,1982: 250). In the present study, the data was also analysed to reveal certain characteristic steps for Chinese EFL learners in learning English questions.

The analysis of the transitional constructions mainly focussed on two aspects of question forms (i.e., inversion and the use of auxiliaries) for it has been observed that these aspects of English question forms would reveal different rates of development among different classes of English questions; and probably there may be certain transitional trends among different groups of learners representing different levels of development in English question forms.

In the search for transitional patterns reflecting the use of auxiliaries, the focus was on the errors showing confusion between DO and BE auxiliaries used as operators in forming questions. DO in this study is a term used to stand for a family of auxiliaries, i.e., **do**, **does** and **did**;

while **BE** to stand for **am, is, are, was** and **were**. In the data analysis, an error showing the exchange of **DO** with **BE** or **BE** with **DO** in a question was counted as a **DO vs. BE confusion error**. Although several types of auxiliary confusion errors (e.g., confusion among auxiliaries of **BE** family and confusion among auxiliaries of **DO** family) were identified, the study only focussed on errors indicating confusion between **DO** and **BE** families for it was observed in the pilot study (see 3.3.) that this type of errors might be a troubling area for Chinese EFL learners. Eventually, the results of an error count revealed that DO vs. BE confusion errors accounted for a relatively large proportion as compared with other structural question errors[8] (see 4.2.1. for illustration). Another consideration was that the search for the transitional patterns reflecting the confusion between these two types of auxiliaries frequently used as operators in forming English questions might reveal a characteristic step in the learning of English question forms. (For illustration of different types of auxiliary confusion, see Section 5.2.2. For discussion in terms of language learning universals, see 5.2.3. For definition and illustration of non-inversion errors, see Section 3.3. and Section 3.5.2.2.)

In this analysis of transition constructions, three English question classes (i.e., Yes-no question, Wh-question and Alternative question) were involved. The following points were explored:

1) Whether or not the rate of increase in inversion varied between different question classes (i.e., inversion as a structural item in one question class may be learned earlier than in the other);

2) Whether or not there was a decrease of non-inversion errors as compared with other structural question errors for each question class along with the increase of accuracy on question forms among the subjects;

3) Whether or not there were patterns reflecting the confusion between auxiliaries DO and BE used as operators in forming questions.

The analysis in terms of transitional constructions was also based on the results of the error analysis. Actually, this involved the reorganizing of the same data (i.e., same data as used in the hierarchical analysis) in different ways. In the section dealing with the comparison of transitional patterns between the three major classes of English questions, the analysis basically involved the computation for the error patterns for each question class. Such comparisons attempted to account for the relationship among the three classes of questions. In other sections analysing the characteristic error patterns for different groups of

subjects, a further step involved was distribution of the subjects into groups according to the ranges of accuracy percentage in which they belong. The rationale for distributing the subjects into different groups in terms of their accuracy on question forms was that the study was only limited to the learning of English interrogative structures. The subjects' performance on the task might reflect their maturity in English question forms. This may imply that the learners' ability to produce question forms may not necessarily have direct relation to their overall proficiency of English which actually involves the ability in every aspect of the language. The difficulties in defining the relationship between learners' overall proficiency and their ability in one specific aspect of language--this refers to English question forms in the present study--led to the division of the subjects into different groups according to their performance in the translation task (for illustration, see 4.2.2.; for further rationale, see Note 3). It was assumed that this could serve the purpose for comparing the patterns of one structural error type with other structural error types in a question class between groups of subjects.

The actual steps in doing the analysis were as follows:

i. The data was examined and marked for errors showing cases of non-inversion and wrong use of auxiliaries as operators or other possible

errors indicating the violation of syntactic rules in forming English questions.

ii. The sentences with the above error types were grouped under different question classes. In the present analysis, the question classes studied were Yes-no questions, Wh-questions and Alternative questions.

iii. Subjects were allocated into five groups according to their percentage of accuracy on question forms (See Chapter 4; Appendix IV). This was intended to establish groups representing different levels of development in question forms (see above and Note 3 for rationale).

iv. The proportion of non-inversion errors and the proportion of DO vs. BE confusion errors to the total number of structural errors were then computed for the overall patterns for the three question classes.

v. The computation of the proportion of non-inversion errors and the proportion of DO vs. BE confusion errors to the total number of structural errors for patterns for different groups of subjects.

The above steps resulted in the tables and figures presented in detail in Chapter 4.

Notes

1. The Guangzhou Insititute of Foreign Languages (GIFL) is one of the key foreign languages institutes in China. It trains college students of oriental and western languages and literature. It also offers postgraduate courses for a number of subjects in oriental or western languages and literature leading to MA degrees. However, the subjects of this study were not English majors of the Institute. They were English learners in some of the spare-time education courses offered by certain departments of the Institute.
2. In China, secondary school textbooks of English include most of the basic items of English grammar. According to a survey conducted by Professor Gui Shi-chun (1982) of GIFL, the average size of English vocabulary of secondary school graduates in China is about 1,200 words.
3. Actually, an English test was also given to the subjects after they finished the translation task. This was intended to measure their overall proficiency of English. The English test paper was set by Hong Kong Examinations Authority for Hong Kong Certificate of Education Examination in 1984. The two sets of rank orders of the subjects derived from the test of proficiency and the translation taks appeared

to generally correspond to each other. However, the present study was only focussed on the learning of English question forms, particularly on a comparison of the transitional patterns between the three major classes of English questions, and not involved in an account of the relationship between the learning of English question forms and the learning of other aspects of English. (Actually, The comparison of transitional patterns between groups was only a part of this research.) It was thus assumed that the division of the subjects into different levels of development in English question forms might not necessarily reiy on the measurement of their overall proficiency in English. In addition, the reliance on the measurement of learners' overall proficiency might raise the issue of defining the relationship between the learners' overall proficiency and their ability in one specific aspect of syntax which refers to question forms in the present study. To give such a definition may require further research, which is beyond the scope of this study. Eventually, the scores of the proficiency test were not included in the report of the results. Therefore, the division of the subjects into different groups was based on their performance on the translation task, though this may remain a limitation of the present study.

4. Other structural types of English questions, i.e., Tag Questions, Negative questions, there+BE constructions, were later excluded from the analysis to avoid aspects other than inversion and use of auxiliaries in forming English questions, e.g., the aspect of negation involved in Tag qeustions and Negative questions and transformation in the existential sentences. This was intended to facilitate the comparison between different question types only in the aspects of inversion and use of auxiliaries as operators. See Appendix III for illustration of the structural types of questions analysed in this study. (cf.,Quirk, et al., 1972:956-956.)

5. The 59 sentences in the translation test included four statements for distracting purpose. This was intended to distract the subjects from the feeling that any sentence they heard was an interrogative sentence. Actually, the embedded questions in the test might also serve the purpose. (See Appendix II for other details about the test.)

6. A sentence produced by a subject is considered to be a deviation if it did not reflect the structure the test intended to elicit. It was then excluded from the analysis. For example, for the Chinese stimulus "去年夏天他到那里去了?" (Where did he go last summer?), one subject translated it into "Did he go there last summer?". The sentence was

then excluded from the statistical analysis since it is not a Wh-question as it was intended in the test.

7. The percentage of accuracy for each structural type for each subject was obtained by computing a ratio whose denominator was the sum of the subject's expected score for each obligatary occasion and whose numerator was the sum of the actual score. The resulting quotient was multiplied by 100 to yield a whole number. For example, if a subject has five occasions for the structural type **Yes-no Question (DO)** and produced one correct question, two with inversion yet supplied wrong auxiliaries as operators and two univerted sentences, the score for the question type for the subject is computed as follows:

$$\text{Accuracy score [Y-N Q (DO)]} = \frac{2 + 1 + 1 + 0 + 0}{10} = .40 \times 100 = 40$$

(cf., Dulay, **et al.**, 1982:221-222)

8. The term "structural error" or "structural question error" in most of the contexts of this thesis refers to those errors reflecting the violation of syntactic rules in forming English questions (see 3.5.2.2. for explanation and illustration).

Chapter 4

Results

The analysis of the data for this study according to the procedures described in Chapter 3 has yielded a hierarchy illustrating an order of difficulty for the structural items for Chinese EFL learners, and some transitional patterns for the learners' transitional grammatical constructions. The observed hierarchy and transitional patterns for the major types of English questions will be reported on in separate sections of this Chapter.

4.1. The Hierarchy of English Interrogative Structures for Chinese EFL Learners

The hierarchical analysis resulted first of all in a matrix (see Table I) showing the percentage of disconfirmatory cases for each pair of structural items tested.

The number presented in Table I is the per cent of disconfirming cases for each relationship. In reading the table, the relationship tested is: "the learning of the structure designated by the row precedes the learning of the structure designated by the column". In Dulay and Burt's study (1974), a relationship held if the percentage of disconfirming cases for a pair was

Table I

Matrix of Percentages of Disconfirmatory Cases for Tree Analysis

	1 Y-N Q (Aux)	2 Y-N Q (Cop/Have)	3 Y-N Q (Do)	4 WH-Q (DO)	5 WH-Q (Cop)	6 EMB Q	7 ALT Q
1 Yes-no Q (Aux)		11	7	6	3	8	1
2 Yes-no Q (Cop/Have)	7		2	6	3	10	3
3 Yes-no Q (Do)	24	23		17	7	16	3
4 Wh-Q (Do)	19	22	12		5	17	4
5 Wh-Q (Copula)	48	53	37	38		43	7
6 Embedded Questions	21	26	11	17	6		4
7 Alternative Questions	68	73	54	61	21	62	

Tolerance level = 7%

5% or less. However, it was also suggested that a tolerance level of 6% or 7% of disconfirming cases might be accepted (Dulay, **et al.**, 1982:223). In our study, 7% has been adopted as a tolerance level for determing the relationship among the structual items. Therefore, if the per cent of disconfirming cases for a pair is 7% or less, the relationship holds; i.e., the structure designated in the row is learned before the structure designated in the column. For example, by reading the first row of the table, we can conclude that the learning of Yes-no questions (Aux) in the row precedes the learning of Wh-questions (Copula) in the column, since there are only 3% of disconfirming cases. However, we cannot conclude that the learning of Yes-no questions (Aux) precedes the learning of Yes-no questions (Copula/Have) because 11% of the subjects learned Yes-no questions (Copula/Have) before Yes-no questions (Aux); thus, the relationship is disconfirmed.

The test of relationships for the structures presented in the matrix has resulted in a tree (see Appendix VI) showing the relationships between the structural items tested. These relationships may be more clearly seen in the form of a hierarchy in Figure I (q.v.).

Figure I

Hierarchy of English Interrogative Structures

For Chinese Subjects

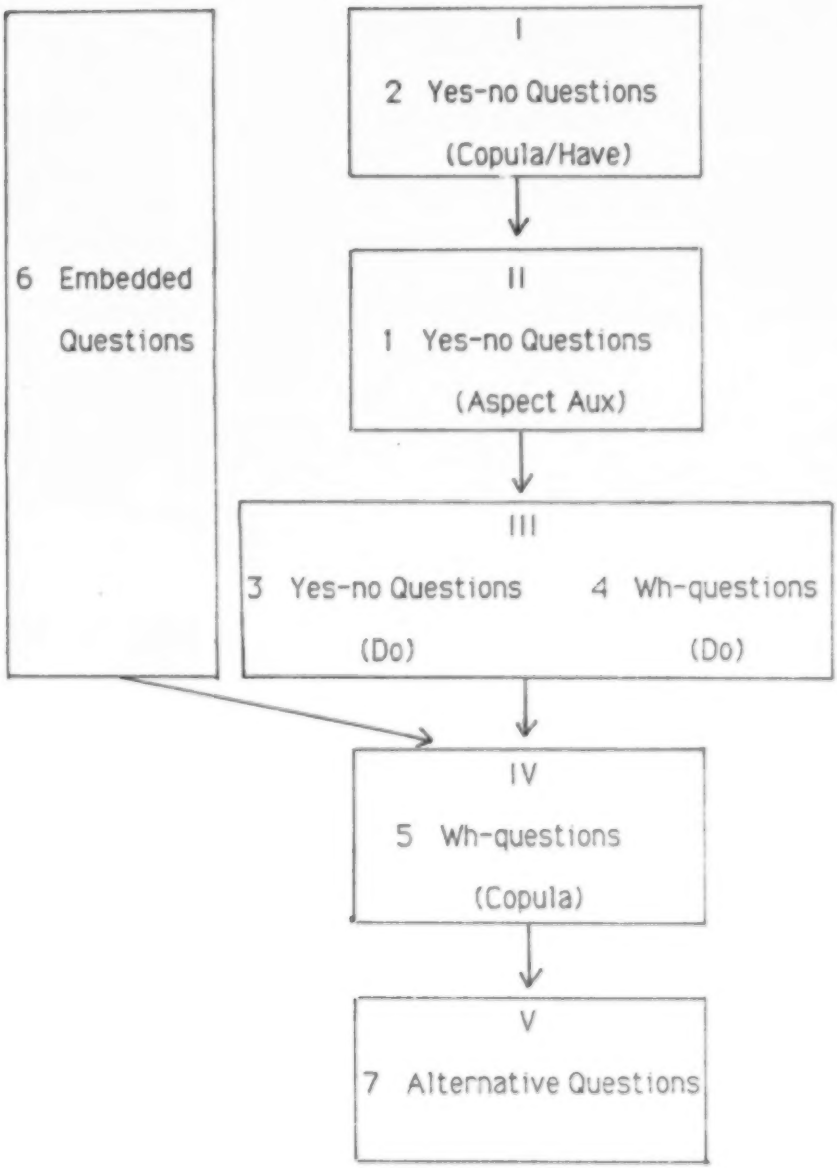


Fig. I illustrates the learning hierarchy obtained; it reflects the order of difficulty for learning the major types of English questions by Chinese EFL learners. It appears that certain structures (or group of structures) are learned before other structures (or group of structures). By ignoring the "irregular" item (e.g. Embedded questions) for the time being, we can see clearly that the rest of the structures are ordered in this way:

1)The learning of Yes-no Questions (Copula/Have) precedes the learning of all other structures;

2)Then Yes-no questions (Aspect auxiliary) precede the other four types of structures;

3) Yes-no questions (Do) and Wh-questions (Do) appear to be in a group that precedes Wh-questions (Copula) and Alternative questions;

4) Wh-questions (Copula) only precede Alternative questions, and

5) Alternative questions appear to be the most difficult structure revealed by the Hierarchy.

The above hierarchy has tentatively revealed that, among Chinese learners, the sequence for learning English question forms may proceed from Yes-no questions to Wh-questions and then Alternative questions. However, the relationships between different question types should not be treated as clear cut relationships; rather, the process of learning

different types of questions may be a continuum in which some structures under a question class may overlap with a certain structure of another question class. For example , in Step III of the hierarchy, Yes-no questions (with DO as operator) appeared to be parallel with Wh-questions (with DO as operator). This may suggest that, in learning English questions, certain structural types of a different question class may be learned at about the same stage. It also appears that the inherent structure of a question tends to constitute the major difficulties for the learners in the learning process; e.g., the reason why the type Yes-no question with copula as an operator is learned before Yes-no question with DO as an operator may be due to structural differences between the two types of sentences. This may also be true to other question types; e.g., in Wh-questions. Such structural differences as revealed in the hierarchy and other issues will be discussed further in Chapter 5.

4.2. Transitional Patterns of Major Question Classes

In examining the transitional patterns, the focus has been on the use of inversion and the use of DO and BE as operators in forming English questions. These two aspects have been observed to be the major problems confronting students in the learning of English questions forms. The

results will be reported in the following sections in terms of these two aspects. This report will be realized in the following:

a) The general patterns of the three major question classes for all subjects;

b) The patterns of each question class for different groups of subjects representing different levels of development. Both ways attempt to reflect the same tendency in the development of English question forms among the Chinese learners from two perspectives.

4.2.1. General Transitional Patterns of the Three Major Questions Classes

By examining the percentage of non-inversion errors to total structural errors in each of the three question classes, i.e., Yes-no questions, Wh-questions and Alternative questions, the results are shown in Table 2 (q.v.).

In the table, the percentage of the total structurally erroneous sentences[1] compared with the number of attempted sentences[2] within each question class may first of all tell us that Yes-no question is structuarlly easier than Wh-question and both Yes-no question and Wh-question are easier than Alternative question, since all the subjects made 20% erroneous sentences in the translation task for Yes-no

questions, 34% for Wh-questions and 54% for Alternative questions. This seems to correspond with the finding of the hierarchical analysis (see Section 4.1.) which revealed that the sequence for learning English question forms among the Chinese EFL learners proceeded from Yes-no questions to Wh-questions and then Alternative questions.

Table 2
Percentage of Non-inversion Errors to Total Structural Errors in the Three Major Classes of English Questions[3]

English Question Classes	Number of Subjects	Number of Attempted Sentences (NAS)	Total Erroneous Sentences (TES)	Percentage of TES to NAS	Number of Non-inversion Errors	Percentage of Non-inversion Errors to TES
Yes-no Questions	139	1400	283	20%	25	9%
Wh-Questions	139	1750	601	34%	221	37%
Alternative Questions	139	362	195	54%	122	63%

(For an correlational analysis of Non-inversion errors (Table 2) and DO vs BE errors (Table 3) see Note 3 of this Chapter.)

Table 3

Percentage of BE vs DO Confusion Errors to Total Structural Errors in the Three Major Classes of English Questions[3]

English Question Classes	Number of Subjects	Number of Attempted Sentences (NAS)	Total Erroneous Sentences (TES)	Percentage of TES to NAS	Number of BE vs. DO Errors	Percentage of BE vs. DO Errors to TES
Yes-no Questions	139	1400	283	20%	125	44%
Wh-Questions	139	1750	601	34%	175	29%
Alternative Questions	139	362	195	54%	35	18%

The more important finding revealed in Table 2 is the percentage of non-inversion errors as compared with the total erroneous sentences for each question class. The higher percentage of non-inversion errors in Wh-questions than in Yes-no questions suggests that the rule of inversion is learned first in Yes-no questions and then in Wh-questions. The highest percentage of non-inversion errors in Alternative questions tends to show that it is the question class least developed in the rule of inversion. This overall pattern of the three question classes tends to support previous claims that, in the learning of English questions, first and second language

learners follow certain universal sequence in which learners gradually increase inversion in Yes-no questions, and at later stages inversion is extended to Wh-questions. The present study also found that Alternative question was least developed in inversion as compared with Yes-no question and Wh-question among Chinese learners.

Another interesting finding of the present study is that the confusion in the use of DO vs. BE as question operators is not randomly distributed. The proportions of DO vs. BE errors to total erroneous sentences (see Table 3) in the three question classes reveal that the pattern is opposite to the pattern of non-inversion errors. The curves in Fig. 2 reveal that

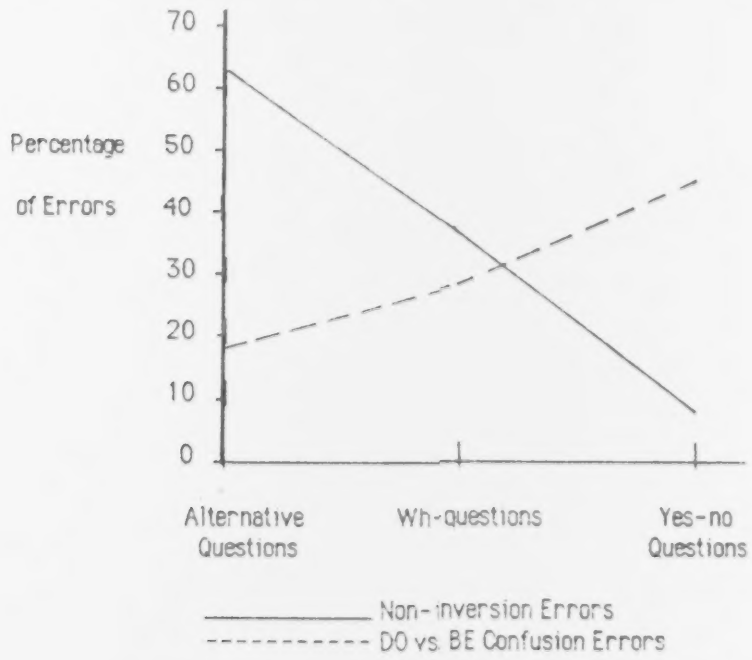


Fig. 2 Curves showing the relationship between Non-inversion errors and DO vs. BE confusion errors in the three question classes[3]

non-inversion errors tend to be decreasing while DO vs. BE confusion errors increasing from Alternative questions, the most difficult question class to Wh-questions and then Yes-no questions. Such patterns show that the two error types seem to occur at two different stages of development with the DO vs. BE confusion errors representing a more advanced error type for the Chinese learners. This will be further illustrated in the following sections dealing with the patterns in each question class separately.

4.2.2. Transitional Patterns of Each Major Question Class

In the following sections, the focus is on the transitional patterns of each separate question class. The subjects were divided into five groups according to their achievement scores in the translation task (see Chapter3 for the rationale). This was attempted to serve the purpose of comparing the error patterns between the groups in order to see if there are certain development tendencies across different groups of subjects representing different levels of development in English interrogative structures. The five groups taken to represent the five levels of development were:

Group I--the percentage of accuracy ranges from 35-59 % ;

Group II--the percentage of accuracy ranges from 60-69%;

Group III--the percentage of accuracy ranges from 70-79%;

Group IV--the percentage of accuracy ranges from 80-89%;

Group V--the percentage of accuracy ranges from 90-100%.

4.2.2.1. Inversion in Wh-questions

By examining the proportion of non-inversion errors in relation to the other structural errors in Wh-questions, the results shown in Table 4 (q.v.) were obtained.

Table 4
Percentage of Non-inversion Errors
to Total StructuralErrors in
Wh-questions[4]

Groups in Terms of Accuracy(%)	Number of Subjects	Number of Attempted Sentences (NAS)	Total Erroneous Sentences (TES)	% of TES[5] to NAS	Number of Non-inversion Errors	% of Non-inversion Errors to TES
1 (35-59%)	10	128	104	81%	63	61%
2 (60-69%)	16	184	145	79%	72	50%
3 (70-79%)	15	190	100	53%	32	32%
4 (80-89%)	46	606	175	29%	44	25%
5 (90-100%)	52	687	77	11%	10	13%

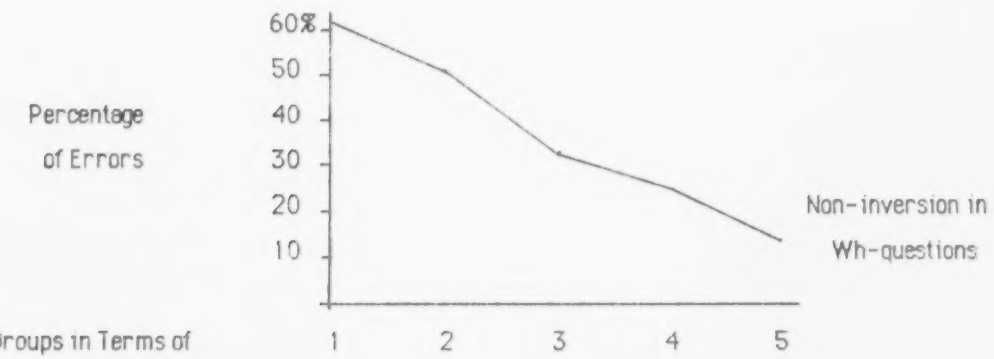


Fig. 3 Curve showing Non-inversion errors in Wh-questions
(For correlational analysis of Table 4-9, see Note 4 of this Chapter)

In the table, we can see that the decrease of non-inversion errors in Wh-questions is directly proportional to the subjects' syntactic maturity in English questions. That is to say, as the learners produced less errors in in question forms, the percentage of non-inversion errors in wh-questions

decreased. This can be seen more clearly in Figure 3, which provides a graph of the curve.

4.2.2.2. Confusion Between the Use of DO and BE in Wh-questions

Proportion of errors showing a confusion between the use of DO and BE as operators in Wh-questions to other structural errors was computed with the results shown in Table 5.

Table 5

Percentage of BE vs DO Confusion Errors

to Total Structural Errors

in Wh-questions[4]

Groups in Terms of Accuracy(%)	Number of Subjects	Number of Attempted Sentences (NAS)	Total Erroneous Sentences (TES)	% of TES[5] to NAS	Number of BE vs Do Errors	% of BE vs DO Errors to TES
1(35-59%)	10	128	104	81%	18	17%
2(60-69%)	16	184	145	79%	29	20%
3(70-79%)	15	190	100	53%	42	42%
4(80-89%)	46	606	175	29%	61	35%
5(90-100%)	52	687	77	11%	25	32%

From the above result, it is not difficult to see that the percentage of errors showing confusion between DO and BE tends to be inversely proportional to the learners maturity in question forms. That is, those learners with higher percentage of accuracy on the task tend to make more errors of the DO vs. BE confusion type than those with a lower percentage of accuracy. This interesting finding does not suggest that learners of less maturity in question forms do not have problems with the use of forms of DO and BE as question operators. Rather, it tends to suggest that non-inversion errors and the errors showing confusion between DO and BE as operators reflect two characteristic error types which occur at two different stages of development. The comparison of the non-inversion errors and the errors of DO vs. BE confusion in Wh-questions presented in Figure 4 may show this more clearly.

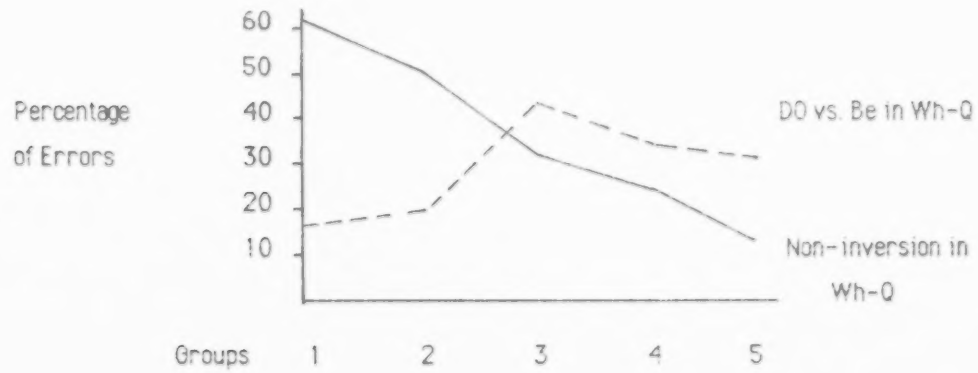


Fig. 4 Curves showing Non-inversion errors and DO vs. BE confusion errors in Wh-questions

4.2.2.3. Non-inversion and the Confusion between DO vs. BE in Yes-no Questions

Yes-no questions (not including Tag questions), as has been shown in the learning hierarchy (Fig. 1), are structures that were learned earlier than Wh-questions and Alternative questions. Therefore, in the present data, only very few errors were found of non-inversion in the Yes-no questions under investigation. A comparison between the learning of inversion rules in Wh-questions and in Yes-no questions reveals the fact that there is a stage in which inversion is still a problem in the learning of Wh-questions but not in Yes-no questions, as has been reported in previous ESL acquisition studies. Even among the limited examples of

Table 6

Percentage of Non-inversion Errors
to Total Structual Errors
in Yes-no Questions[4]

Groups in Terms of Accuracy(%)	Number of Subjects	Number of Attempted Sentences (NAS)	Total Erroneous Sentences (TES)	% of TES[5] to NAS	Number of Non-inversion Errors	% of Non-inversion Errors to TES
1 (35-59%)	10	76	47	62%	8	17%
2 (60-69%)	16	140	65	46%	8	12%
3 (70-79%)	15	150	56	37%	4	7%
4 (80-89%)	46	490	78	16%	4	5%
5 (90-100%)	52	550	37	7%	1	3%

Table 7

Percentage of DO vs. BE Confusion Errors
to Total Structural Errors
in Yes-no Questions[4]

Groups in Terms of Accuracy(%)	Number of Subjects	Number of Attempted Sentences (NAS)	Total Erroneous Sentences (TES)	% of TES[5] to NAS	Errors of BE vs DO Confusion	% of DO vs BE Errors to TES
1 (35-59%)	10	76	47	62%	25	53%
2 (60-69%)	16	140	65	46%	26	40%
3 (70-79%)	15	150	56	37%	25	45%
4 (80-89%)	46	490	78	16%	38	49%
5 (90-100%)	52	550	37	7%	11	30%

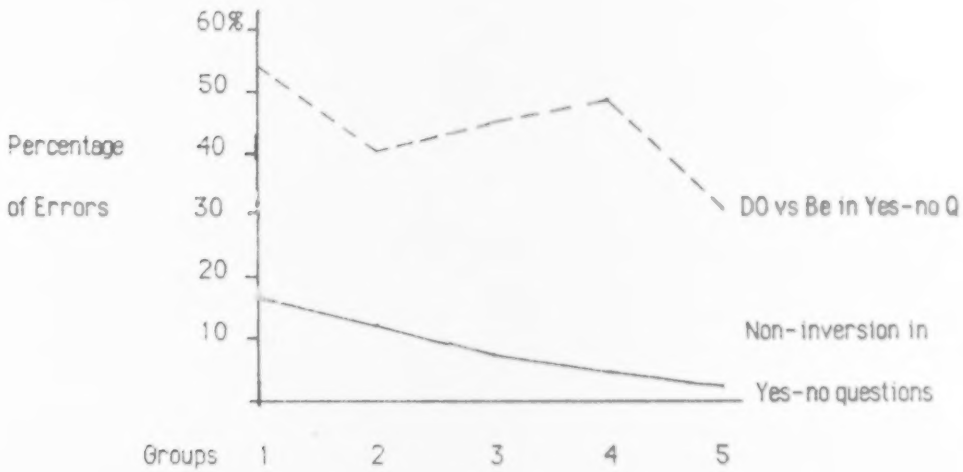


Fig. 5 Curves showing Non-inversion errors and
DO vs. BE confusion errors in Yes-no questions

non-inversion errors in Yes-no questions, we can still observe that the proportion of non-inversion errors tends to decrease as the learners' percentage of accuracy in the task increases, indicating the gradual approximation of the inversion rule through the learning process (See Table 6 and Fig. 5).

However, a more important finding regarding Yes-no questions is that the percentage of errors showing the confusion between the use of DO and BE remains at a relative high level, constituting a contrast to the small proportion of non-inversion errors (see Table 7 and Fig.5). This is further support to the claim in Section 4.2.2.2. that the decrease of non-inversion errors is accompanied by an increase of errors showing the confusion between the use of DO and BE as question operators at certain learning stages. Since Yes-no questions were almost mastered by the subjects, the high percentage of DO vs. BE errors tends to support the claim that errors of DO vs. BE confusion is a more advanced error type than non-inversion errors.

4.2.2.4. Inversion in Alternative Questions

In alternative questions, the data shows that the inversion rule constitutes the most difficult area for learners. This could be shown in Table 8 and Figure 6 following.

Table 8

Percentage of Non-inversion Errors

to Total Structural Errors

in Alternative Questions[4]

Groups in Terms of Accuracy(%)	Number of Subjects	Number of Attempted Sentences (NAS)	Total Erroneous Sentences (TES)	% of TES[5] to NAS	Number of Non-inversion Errors	% of Non-inversion Errors to TES
1 (35-59%)	10	24	21	88%	15	71%
2 (60-69%)	16	38	29	76%	18	62%
3 (70-79%)	15	38	27	71%	21	78%
4 (80-89%)	46	123	65	53%	40	62%
5 (90-100%)	52	136	53	39%	28	53%

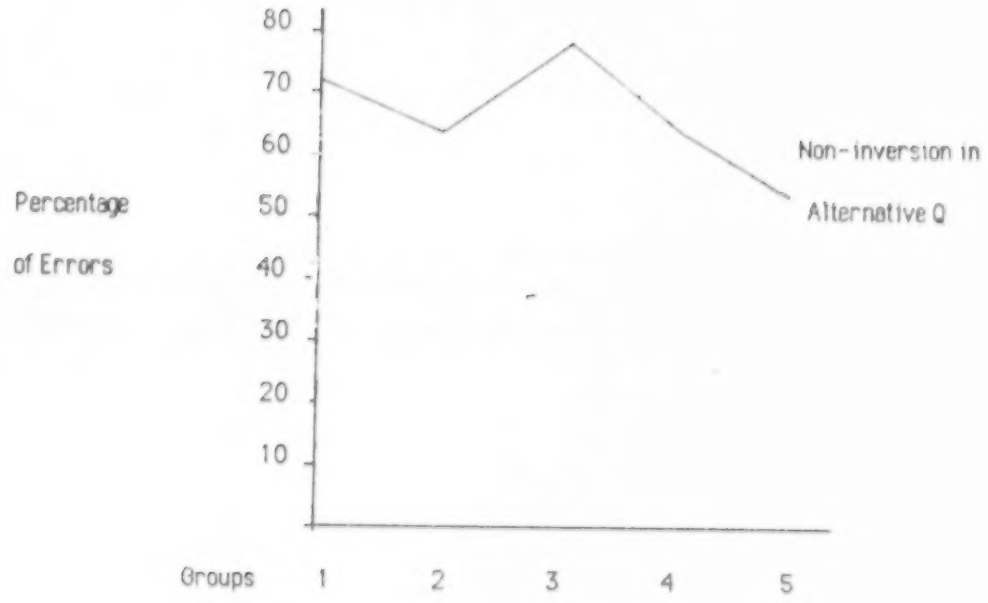


Fig. 6 Curve showing Non-inversion errors in Alternative questions

From the above Table and Figure, we can see that the percentage of non-inversion errors fluctuates between 53-78%, showing that the Alternative Question has the largest proportion to non-inversion errors as compared with Yes-no questions and Wh-questions. As has been shown in the results of the hierarchical analysis, Alternative question is the most difficult question class for learners. Comparing Yes-no questions, Wh-questions and Alternative questions in this research, the large proportion of non-inversion errors in Alternative questions may enable us to conclude that the learning of inversion may be posited as an index indicating the development of question forms in English.

4.2.2.5. Confusion between the Use of DO and BE in Alternative Questions

The percentage of errors indicating confusion between the use of DO and BE in Alternative questions appears to be much lower than the percentage of non-inversion errors. This also suggests that the learning of the rule of inversion and the rule of using DO and BE as operators reflect two distinctive stages of development in the process of learning English questions forms (see Table 9 and Fig. 7 below).

Table 9

Percentage of BE vs DO Confusion Errors

to Total Structural Errors

in Alternative Questions[4]

Groups in Terms of Accuracy(%)	Number of Subjects	Number of Attempted Sentences (NAS)	Total Erroreous Sentences (TES)	% of TES[5] to NAS	Number of BE vs. DO Errors	% of BE vs DO Errors to TES
1 (35-59%)	10	24	21	88%	9	33%
2 (60-69%)	16	38	29	76%	8	28%
3 (70-79%)	15	38	27	71%	4	15%
4 (80-89%)	46	123	65	53%	10	15%
5 (90-100%)	52	136	53	39%	4	8%

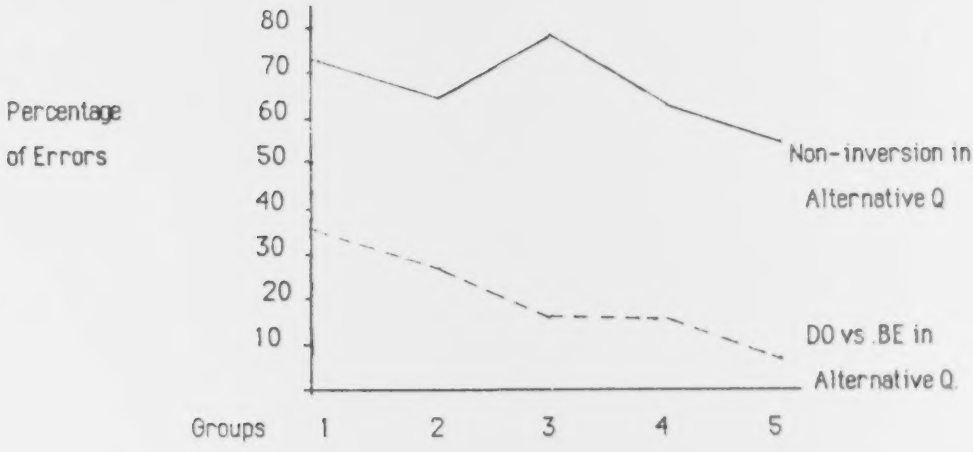


Fig. 7 Curves showing Non-inversion errors and
DO vs. BE confusion errors in Alternative questions

4.3. Summary of Results

The above separate accounts of the hierarchy and the transitional patterns can be summarized as the following:

1) The hierarchical analysis has tentatively revealed that, among Chinese EFL learners, the sequence for learning English question forms may proceed from Yes-no questions to Wh-questions and then Alternative questions (see Section 4.1.).

2) In examining the general transitional patterns of the three major question classes, it appeared that the rule of inversion was learned first

in Yes-no questions, then in Wh-questions and later in Aiternative questions (see Section 4.2.1.).

3) It has also been revealed that the patterns of errors reflecting confusion between the use of auxiliaries DO and BE as question operators are opposite to the patterns of non-inversion errors, suggesting that the two error types may characterize two distinctive stages of development in the process of learning English question forms.

4) The separate accounts of the patterns of non-inversion errors and DO vs. Be confusion errors in each question class further support the claims in 2) and 3) and reveal the following tendencies:

i. That the Chinese EFL learners gradually increased inversion in each of the question classes;

ii. That the learners appeared to have an increase in errors of DO vs. BE confusion as they pay more attention to the inversion rule in forming English questions, showing that the use of auxiliaries as operators in questions is a more advanced syntactic aspect than the rule of inversion in the process of learning English question forms.

Notes

1. Structurally erroneous sentences in this study refer to those interrogative sentences that are deviated from the syntactic rules for forming questions. Deviation from the choice of vocabulary items was ignored in the analysis (see 3.5.1. for further explanation).
2. An attempted sentence refers to one that gives the question type intended in the translation task. If a subject failed to produced a sentence after a stimulus, or if the sentence deviated from the structure the task intended to elicit, the sentence was treated as an omitted (or "unattempted") item, which was excluded from the statistical count. (See 3.5.1. for further explanation.)
3. A statistical analysis of the correlation between Non-inversion errors and DO vs. BE errors in the three major classes of English questions using the **Pearson product moment correlation** indicates that there is a negative relationship between these two types of errors. This tends to show that an increase in DO vs. BE errors is related to an decrease in Non-inversion errors. For example:

	Non-inversion Errors (%)	DO vs. BE Errors (%)
Yes-no Q	9	44
Wh-Q	37	29
Alternative Q	63	18

(With reference to Table 2, p.71 & Table 3, p.72)

$r = .997$ $p < 0.05$

4. The chief purpose of presenting Tables 4-9 is to show the relationships between the development of inversion or the use of auxiliaries (DO and BE) as question operators and the subjects' syntactic maturity in question forms. In each of the tables, the percentages of Non-inversion errors or DO vs. BE confusion errors are presented for each of the five groups. The percentages of errors and the percentages of accuracy for each group in a table may be considered as two sets of ranks. It seems that the **Spearman rank order correlation** may be applied here to determine the degree of similarity between the two sets of ranks. However, one of the problems for the application of such statistical analysis is the fragility of the rank order correlation. When the number of items to be compared is ten or less, a shift in rank order of one item may change the correlation considerably (Dulay, **et al.**, 1982:273). Since the number of items to be compared in each of these tables is 5, which is much smaller than it is required, it has been decided not to conduct correlational analysis to these tables. But graphs are provided for the tables to show the trends revealed in the error patterns in stead.

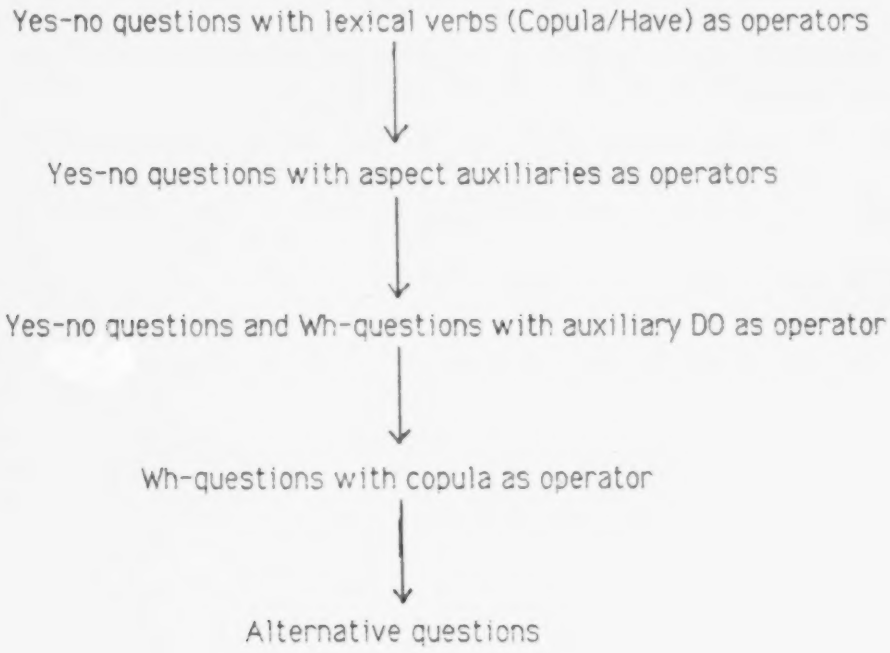
5. As has been mentioned in Section 4.2.2., the subjects were divided into five groups based on the ranges of their percentage of accuracy. The percentage of errors--the percentage of Total Erroneous Sentences (TES) compared to Total Number of Attempted Sentence (NAS)--for each group is also included in the following tables as a kind of cross-reference.

Chapter 5

Discussion

5.1. Discussion of the Learning Hierarchy for English Interrogative Structures

One of the major attempts of the present study was to determine whether or not there is an order of difficulty for the interrogative structures of English for Chinese EFL learners. The results of the tree analysis have revealed that the structures under investigation were ordered in the following way:


Yes-no questions with lexical verbs (Copula/Have) as operators
Yes-no questions with aspect auxiliaries as operators
Yes-no questions and Wh-questions with auxiliary DO as operator
Wh-questions with copula as operator
Alternative questions

The arrows "↓" here indicate the direction of learning, suggesting that one structural type is learned[1] before the other. In other words, some structures are more difficult than others and there may be a natural order for the structures in the process of learning. An important issue in the discussion of such an order may involve the possible causes underlying the order.

Before accounting for the sub-hierarchy of learning the different structures within a question class, we may first look at the overall hierarchy. Among the major classes of English questions, our subjects have appeared to have learned Yes-no questions before Wh-questions while Alternative questions were the last question class learned.

Based on the observed order of learning different question classes, we may first of all focus on a structural interpretation of the order. Structually, the major differences between the three classes of questions lie in that, to form a Yes-no question, only the inversion of the subject and the operator is required while to form a Wh-question requires both inversion and the fronting of a Wh-word. The formation of an alternative question is an even more complicated process, the combination of two questions by the particle "or", usually with ellipsis in the second clause. So, from the structural points of view, a Wh-question could be said to be a

more complicated sentence process than a Yes-no question. And the Alternative question reveals even more structural complexities than the other two question classes. Therefore, it seems that the structural complexities are the chief sources of difficulty for the learner in learning English questions. This observation may enable us to claim that the differences in the structural complexities[2] of the major classes of English questions are the major factors behind the learning order.

However, this order also happens to correspond generally to the teaching order which appears in the text books used for EFL learners in China. For example, in one widely used English textbook (Xu, 1979), the order of teaching different question classes is, first Yes-no questions followed by Wh-questions and then Alternative questions. Thus, it might be argued that the observed order is a reflection of the order of teaching the structures. But, at the time the investigation was carried out, the students had been studying English (including the major question classes) for at least two years (see Section 3.2). According to the syllabus (Xu, 1979), the interrogative structures would be taught in the first term of the first year in an English course. This means that, at the time of investigation, all the students had already been taught the English question forms for at least one year. Though Wh-questions appear after

Yes-no questions in the textbook, it would usually be presented to the learners immediately following Yes-no questions. And for an alternative question, it basically involves the same inversion rule as Yes-no questions though it is presented a bit later than Yes-no questions and Wh-questions in an English course. All this may lead us to assume that the teaching order seemed to have very little effect on the learning order, much less to say, to determine the learning order. In other words, if the students were taught in the reverse order, the order of difficulty may still appear the same as has been revealed in the study.

Another supporting piece of evidence is the embedded Wh-questions which were also included in the investigation. The results of the investigation show that embedded questions as a class of questions are easier than Wh-questions and Alternative questions though they usually appear very late in the curriculum. This could be an example showing that the order of teaching may not be a decisive factor determining the learning order.

Here, a further question may be asked about the reason why embedded questions appeared to be some what easier structures in the learning order for Chinese learners while it has been reported that embedded questions were learned rather late by ESL learners of other first language

backgrounds (Dulay, et al., 1982). Structurally, an embedded question involves the combination of two clauses, the independent clause and the dependent clause (also the interrogative clause here). Therefore it appears to be a complex sentence process. Though the interrogative clause leaves an information gap and thus resembles a question, it is absent from subject-operator inversion. Such uninverted word order seems to facilitate learning as the learners tend to be more used to such a structure since both in English and particularly in Chinese, the normal word order is Subject+Verb+Object. Another important factor may be that the students had at least two years experience of learning English, which might have prepared them for such complex structures. Therefore, there may be a stage where complex sentence structures like embedded questions render very few difficulties to the learners while the more difficult interrogative structures like alternative questions still remain problems to the learners as a result of the inverted word order in English questions.

In the sub-hierarchies, the structural differences between the different question types are also reflected in the difficulty order. For example, in Yes-no questions, the hierarchy has revealed that:

1) The learning of Yes-no questions with copula as operator precedes the learning of Yes-no questions with aspect auxiliaries as operators; this

suggests that learning Yes-no questions (copula) is easier than learning Yes-no questions (aspect auxiliary).

2) Both Yes-no questions (copula) and Yes-no questions (aspect auxiliary) precede Yes-no question with DO auxiliary as operator, suggesting that the Yes-no question (DO) is the most difficult of the three sturctures.

The formation of a Yes-no question with copula as operator simply involves the inversion of the copula with the subject. This is simpler than the inversion of the aspect auxiliary with the subject, which requires the splitting of the verb phrase with the aspect auxiliary used as an operator in a Yes-no question. Things may be even more difficult in Yes-no questions with DO auxiliary as operator since forming such a question requires the insertion of DO auxiliary which is a more complicated process. Therefore, it is not difficult to see that the order of learning the structures is the result of the differences in complexity among the structures.

It is interesting that, though in Yes-no questions the structural type with the auxiliary DO as an operator is the last to be learned in the sub-hierarchy, the DO auxiliary as operator in Wh-questions is learned before copular structure in a Wh-question. This may be a result of the use

of an overgeneralization strategy by the learners. It is likely that the insertion of DO as an operator in an interrogative sentence is a rather complicated process in Yes-no questions. Once the structure is learned, learners will not only use the DO-insertion rule but also overgeneralize it in forming other classes of questions. The result is that auxiliary DO is used as operator for a question whenever a learner is not sure whether to use DO or some other auxiliaries as an operator. Therefore, there may be more errors reflecting the substitution (actually, overgeneralization) of DO for BE as operator in a Wh-question. Wh-questions with DO auxiliary as operator may thus appear to be learned before Wh-questions with copula as operator. For example, for the sentence "When is your birthday?" quite a few subjects produced sentences like *"When do your birthday?" or *"When does your birthday?", etc. And the sentence "Why is he so happy?" has ellicited many erroneous sentences like, *"Why does he so happy?".

To sum up, the above discussion has suggested that the learning hierarchy is a result of the differences in structural complexities of the English question types, which basically involve the rule of inversion and the use of auxiliaries as question operators. The sub-hierarchies within the types of questions also tend to reflect that the more complex a question type is, the longer time learners take to learn it. This structural

view of the learning order also suggests that the study of second language learning processes may first of all be based on the structures of the target language.

5.2. Discussion of the Transitional Patterns of the Major Question Classes

The results of the analysis in terms of transitional constructions have shown that the errors Chinese learners made appeared to reveal certain patterns, suggesting that the learners go through some key steps before mastering the structures of English questions. The following sections will focus on the discussion of these patterns and on a comparison of the observed patterns with the transitional steps for ESL learners of other L1 backgrounds as reported in previous studies.

5.2.1. The Development of Inversion in the Major Question Classes

In Section 5.1., discussion on the hierarchy of learning the interrogative structures of English led to a tentative conclusion that the differences in structural complexities are the major factors behind the learning order. This may be further supported by the patterns of inversion in the three question classes.

The patterns revealing the development of inversion has shown that inversion is first developed in Yes-no questions since the percentage of non-inversion errors is the lowest as compared with the other two question classes. In other words, very few non-inversion errors were found in the Yes-no questions produced by the learners, showing that the

rule of inversion is first learned in Yes-no questions. The ability to invert was later extended to Wh-questions and then to Alternative questions. This developmental trend tends to correspond with the hierarchy of learning English interrogative structures, suggesting that the developmental sequence in the major classes of English questions is also reflected in the development of inversion. Possibly, the uneven development of inversion is also a result of the differences in structural complexities among the different question classes.

To take the conditions of learning into consideration, the Chinese learners had been exposed to the English language only during classroom hours. Teachers in such elementary English classes usually exert much effort in presenting and explaining the syntactic rules to the learners. In spite of much rule explanation, these learners still could not avoid making errors, resulting in the uneven development of inversion among different question classes. Before further elaborating this issue in Section 5.2.3., let us proceed to the discussion of the use of auxiliaries as operators in English questions in the next section.

5.2.2. The Use of auxiliaries as Operators in English Questions

In English, to form a syntactically mature question requires not only the application of inversion rule but also the coordination of an appropriate auxiliary (or copula) as a question operator. In the use of auxiliaries or copulas as question operators, quite a few error types have been found; e.g.:

1) The omission of auxiliaries as in,

*Why he so happy?

2)The use of third person singular BE "is" for "are" and vice versa, as in,

*What is your parents?

*When are your birthday?

3) The use of "do" for "does" and "does" for "do", as in,

*Do he understand English?

*Does they play basketball afternoon everyday?

4) Confusion between the use of forms BE ("is" and "are") and DO ("do" and "does"), as in,

*Were you meet the teacher just now?

*Does he one of your best friend?

In such errors reflecting the use of auxiliaries in question formation, we have found that the major error type is Type 4, the confusion between

the use of BE and DO . The study has thus focussed on the search for the patterns underlying this error type.

It is interesting that the patterns appeared to be contrary to the patterns of non-inversion errors; i.e., a decrease of non-inversion errors is accompanied by an increase of errors reflecting the confusion between the use of "BE" and "DO" as question operators. This tendency is rather obvious in Wh-questions (see Fig.4). The interaction between the two curves in Figure 4 clearly indicates that the development of the inversion rule and auxiliaries as operators in Englilsh questions runs in two opposite directions. This may be further exemplified by the contrast between the two types of errors among other question classes. For instance, in Yes-no questions, the learners appeared to have learned the rule of inversion but, as to the use of auxiliaries as question operators, they made a rather high percetage of errors (see Fig 5). In Alternative questions, the rule of inversion was at the time still beyond the learners' attention as is indicated by the high percentage of errors. Interestingly, most students made few errors in the use of auxiliaries in this question class (see Fig.7). All these may reveal that there may be a developmental tendency that learners appear to develop gradually from non-inversion to target-like inversion in learning English questions. As they pay more attention to the

inversion rule in forming English questions,they seem to have an increase in errors of DO vs. BE confusion. This tends to show that the use of auxiliaries as operators in questions is a more advanced syntactic aspect than learning the rule of inversion in the processes of learning English question forms.

The above claim seems to reveal the following:

1) Non-inversion errors and errors reflecting the confusion between DO vs. BE seem to characterize two separate stages in the development of English questions.

2) Learners tend to focus their attention on the inversion rule before learning to discriminate between the uses of different auxiliaries.

3) Errors reflecting the confusion between BE and DO are therefore more advanced errors as compared with non-inversion.

All these may suggest that in learning the syntactic rules of English, learners tend to pay attention to the rules one at a time, as they paid attention to the inversion rules before the rules for discriminating the use of auxiliaries in questions. The sequence in learning these rules may be determined by the syntactic features of English. The more salient a syntactic feature is to mark the semantic information expressed by the sentence type, the earlier it is learned. For example, in question

formation, the ability to use auxiliaries as question operatores appropriately is unlikely to develop before the ability to invert the auxiliary with the subject phrase since inversion is a more salient feature than the use of auxiliaries in forming an English question. This issue will be further discussed in the next section.

5.2.3. Comparison Between the Transitional Steps of the Chinese Learners in Learning English Interrogative Structures and that of Other Learners

By looking at the patterns of the non-inversion errors in the three basic question classes of English, we may conclude that the development of inversion in English questions among Chinese learners follows a sequence in which the rule for auxiliary inversion is first developed in Yes-no questions and gradually extended to Wh-questions and then to Alternative questions. Within each question class, we have seen that there is a tendency for learners to use more uninverted sentences as interrogative sentences at an early stage and gradually learn to apply the rule of inversion till they master target-like interrogative sentences. The following examples from the Chinese EFL learners may serve as an illustration of the developmental errors.

Yes-no questions

"Is he your best friend?"

(1) *He is best friend of you?

(2) *Does he is your the best friend?

(3) *Does he one of your best friend?

Wh-questions

"When did you tell him that?"

(4) *When you tell him this thing?

(5) *When are you told this thing to him?

(6) *When do you tell the thing to him?

Alternative questions

"Do you like coffee or tea?"

(7) *You like coffee or tea?

(8) *Are you like coffee or tea?

(9) *Does you like coffee or tea?

Sentences (1), (4) and (7) in the above examples may show us how uninverted questions look. As has been reported, these are early errors learners made when learning to form interrogative sentences. The development from non-inversion to target-like inversion in forming English questions is a gradual process during which learners may make

errors reflecting confusion between the use of different auxiliaries in their attempts to apply the inversion rule. Sentences (2), (3), (5),(6), (8) and (9) are some examples showing the errors learners made after they learned to apply the rule of inversion yet had not mastered target-like question forms. (For further illustration of the data, see Appendix VII.)

By comparing the above proposed sequence for the development of English questions among Chinese learners with that of ESL learners of other L1 backgrounds, we may be able to see some similarities in the learning processes. Studies on the acquisition of English Yes-no qeustions (Klima and Bellugi, 1966, for L1 acquisition; Ravem, 1968, Gillis and Weber, 1976, for child second language acquisition) have reported that Yes-no questions first appeared uninverted (e.g., *This is a face?) and without DO (e.g., *Daddy go yesterday?) in the learners question forms. Then learners gradually learn to apply the rules of auxiliary inversion and DO insertion in their questions. Felix (1981) reported similar findings with respect to German high school students learning English as a foreign language. The speech data of the high school students showed that the earliest Yes-no questions, which were all formed on the basis of simple copula structures, were frequently intonation marked:

*This is flag?

*It's big shoe?

*It's a pencil big?

(Felix, 1981:99-100)

Although this type of Yes-no question is acceptable in English in some contexts, Felix reported that uninverted intonation question structures were never explicitly introduced by the teacher who even insisted from the very beginning that Yes-no questions always be marked by inversion. Felix claimed that, just as in naturalistic L2 learning, foreign language learners learning English only through classroom instruction tend to go through similar processes in learning English questions.

In the learning of English Wh-questions, various studies (Klima and Bellugi, 1966; Ravem, 1974; Gillis and Weber, 1976) have also reported that L1 and L2 learners use uninverted Wh-questions (e.g., *What you did? *What she is doing?) before they master target-like Wh-questions. Felix (1981) also reported that the German high school students used uninverted Wh-questions (e.g., *What they are picking? *How many turkeys she is feeding?) even though they were never exposed to such forms nor does German allow comparable structures. Felix observed that the students

continued to use uninverted Wh-questions for a period of roughly three weeks despite intensive daily practice of the correct forms.

In a summary of research findings regarding the development of Yes-no questions and Wh-questions, Dulay, **et al.**,(1982) reported:

> "From the available data, scanty though they are, it appears that for some subjects at least, the auxiliary inversion rule is applied to Yes-no questions somewhat before it is applied to Wh-questions. Likewise, the do-insertion rule seems to begin operating on Yes-no questions before it operates regularly in the Wh-questions" (Dulay, **et al.**,1982:132).

Comparing the results of the present study with the above research findings, we may note that the general trend of development in English question forms among Chinese learners is quite similar to the developmental sequence of L1 learners and L2 learners of other native language backgrounds. In the process of learning Yes-no questions and Wh-questions, Chinese learners seemed to use uninverted forms (e.g., *He is best friend of you? *When you tell him this thing?) before they mastered target-like question forms. This is also true for Alternative questions which have not been investigated in most other studies. The patterns of non-inversion errors have also shown that, among Chinese

learners, the rule of inversion is first applied to Yes-no questions and gradually extended to Wh-questions and then to Alternative questions. For instance, we can see clearly in Fig. 2 that the percentage of non-inversion errors in Yes-no questions is the lowest while Wh-questions show a higher percentage of errors and Alternative questions the highest, indicating that the rule of inversion in Yes-no questions is learned before the inversion rule in Wh-questions and the inversion rule in Alternative questions is the last learned among the three question classes.

An important issue here is the uneven development of inversion among the three question classes. Structurally speaking, the three question classes are different in terms of formal complexities. For instance, a Yes-no question only requires the arrangement of the inversion between the subject and the auxiliary. A Wh-question may be considered more complex since it requires two arrangements: movement of a wh-word to the initial position in the sentence and inversion of subject and auxiliary (cf. Clark and Clark, 1977:354; R. Brown, 1968). An Alternative question may be even more complicated because it involves not only inversion but also the formal combination of two interrogative clauses--usually with ellipsis in the second clause--to express two alternatives. Such differences in structural complexity have been used to explain the learning

hierarchy of English questions in this study. It may also be possible to discuss the development of inversion in the light of formal complexity and the strategies learners used in the language learning task.

When learners attempt to use the target language, they may look for grammatical markers that indicate underlying semantic distinctions clearly and make semantic sense (Slobin, 1973). In producing questions, it appears that they first attempt to find a grammatical marker to indicate that a question is a question (Clark and Clark, 1977:354). For example, with a Yes-no question, they usually start with rising intonation resulting in sentences without subject and auxiliary inversion used as questions. With a Wh-question, they may first pick up a wh-word to indicate a Wh-question without inverting the subject and the auxiliary. While in an Alternative question, they may first use the particle "or" only to link two alternatives in order to express the question. It is possible that they tend to use these salient grammatical devices other than inversion to mark questions at the earlier stages. And the fact that some questions are formally more complex than others suggests that formal complexity and the learners' strategies of looking for a salient grammatical marker to indicate a question are two possible interacting factors that bring about the uneven development of inversion. For instance, a Yes-no question is

formally less complex than a Wh-question. Therefore, it may be easier to learn to apply the inversion rule in a Yes-no question than in a Wh-question, which may require more interaction between formal complexity and the learning strategies. In this case, learners appear to first pick up a wh-word which may be more difficult than rising intonation in a Yes-no question before they try to apply the inversion rule. While in an Alternative question, more efforts may be needed to learn to use the particle "or" to link two alternatives to indicate the question before the application of the inversion rule.

The type of errors reflecting the incorrect use of auxiliaries as question operators, seem to reveal a similar learning strategy in use. Such a learning strategy involves the mapping of ideas onto language (Clark and Clark, 1977:340). In this case, the learners tended to randomly use grammatical devices such as auxiliaries used as operators to mark questions. In the learners' quest for semantic coherence, they may at this stage tend to look for one-to-one mappings between ideas and linguistic units. This has been illustrated by a stage of using only BE or only DO to mark questions resulting in a preference for either one auxiliary to stand for other forms or the random use of (or the confusion between) different auxiliaries.

The confirmation through data from various studies that both L1 and L2 learners with different first language backgrounds learn the basic interrogative structures of English in much the same way has suggested that there are universal processes in learning the structures of a language no matter whether it is learned as a L1 or a L2. Recent findings from Felix's study (1981) which was based on data from German middle schools students claim that learners learning English as a foreign language tend to follow similar processes in the development of the interrogative structures of English. This has led him to conclude that the way people learn a second language does not totally depend on the conditions under which they are exposed to the L2 data. He further suggested that foreign language learners are not equipped with separate mechanisms to cope with different learning situations; rather, there seems to be a universal and common set of principles which are flexible enough to be adaptable to the large number of conditions under which language learning may take place (Felix, 1981:108-109).

The above discussion has suggested that Chinese EFL learners appear to share similar patterns in the learning of English question forms as compared with ESL leaners of various L1 backgrounds. This tends to suggest that the Chinese language as a source of interference may not play a significant role in the process of learning the basic interrogative structures of English. It may be interesting to have a further look at this issue based on a contrastive analysis of the interrogative structures of English and Chinese.

In Chinese, questions can be classified into four major classes , i.e., Yes-no question (or general question), Wh-question (or speical question), Alternative question and the last class can be subdivided into negative question and disjunctive (or tag question) (cf. Ren, 1981:611-621). Since the present study is not involved in the aspect of negation, the discussion here only focussed on the first three classes. Structurally, the chief differences between English and Chinese in the three classes of questions are that of word order. While Yes-no questions are expressed with the help of subject auxiliary (copula) inversion or DO insertion in English, they are expressed through adding a question particle to the end of the sentence without changing the word order of the statement. Rising intonation is used in Yes-no questions both in English and in Chinese. The word order in

Wh-questions and Alternative questions in Chinese also resemble statement word order. Furthermore, Wh-questions do not have wh-word fronting. The wh-word usually substitutes the position of the part of sentence to which it refers. The following sentences may exemplify the three classes of questions in Chinese:

1. Yes-no question

你是工人吗？

Ni shi gongren ma?

You are worker (question particle)

"Are you a worker?"

2. Wh-question

你什么时候离开？

Ni shenme shihou likai?

You what time leave

"When are you going to leave?"

3. Alternative question

你要咖啡还是可可？

Ni yao kafei haishi keke

You want coffee or cocoa

"Do you want coffee or cocoa?"

The above brief account of the basic differences in the forms of questions in English and in Chinese may help us discuss the issue of native language interference. The contrastive analysis hypothesis holds that the principle barrier to second language acquisition is the interference of the first language system with the second language system. In the system of the first language, the structures that differ from that of the target language would be reflected in errors produced by second language learners (cf. Lado, 1957; D. Brown, 1980; Dulay, **et al.**, 1982). According to this theory, Chinese learners of English may in the production of English questions make errors reflecting the interference from the mother tongue. For instance, erroneous sentence like *You why so early came back? (你为什么这么早就回来? "Why did you come back so early?") may be produced by Chinese learners as a result of the differences between Chinese and English in wh-question forms. However, most of the errors made by the subjects of this study are comparable with errors produced by ESL learners of various L1 backgrounds. The major type of error was the presence of wh-word fronting but without inversion as has been reported in the previous chapter. There were very few cases showing non-fronting of wh-word in English Wh-questions produced by the Chinese subjects. This may suggest that Chinese language as a source of

interference might not play a significant role in the learning of English Wh-questions. As in Yes-no questions and Alternative questions, the Chinese subjects tended to produce uninverted English questions at the early stage. It may be argued that this could be considered as an instance of L1 interference since the word order in Chinese question is also SVO. However, non-inversion errors have been shown to characterize certain stages in the learning of English question forms among ESL learners of various L1 backgrounds. Thus, the fact that Chinese EFL learners make non-inversion errors could be an indication that they share certain transitional patterns with English learners of other L1 backgrounds in the learning of English questions.

As far as the use of auxiliary is concerned, Chinese EFL learners appeared to have difficulties in the use of the appropriate auxiliaries as operators. However, similar errors were also found in English questions produced by ESL learners of other L1 backgrounds (see Dulay **et al.**, 1982:151). Therefore, the fact that the Chinese language does not make use of auxiliaries in question formation may not account for the source of this type of errors.

Although most of the Chinese EFL learners shared similar error patterns in their production of English questions, there still remained

some variations. For instance, there were several erroneous Wh-questions without fronting the wh-word, like, *Does he go to where last summer? and You hand in letter to whom?. However, the number of such errors is so small (about 3 to 4 errors of this type in the corpus) that it is difficult to conduct a serious discussion. The reason why there were so few variations in the error patterns may be that this study focussed on a very specific aspect of syntax which might not allow a variety of error types.

All these may suggest that in this specific aspect of English syntax, Chinese EFL learners appear to follow similar learning processes as compared with ESL learners of other L1 backgrounds. The significance of the findings in this research is that they tend to support the theories positing universal processes in L1 and L2 acquisition and also favour Felix's recent theoretical position which attempts to extend the application of the theories to the study of EFL learning in the classroom.

5.3. Discussion of the Major Limitations

This study has been based on an orally presented test requiring written translation of Chinese sentences into English. The data has been used to establish an order of learning the interrogative structures of English and to observe some patterns underlying the transitional constructions. Although much effort was put into the design of the test, the selection of materials, the control of testing procedures and the analysis of the data, the translation task used to elicit the language data may still pose certain questions which need to be discussed.

One of the issues may regard the elicited data used to establish the learning hierarchy. It has been pointed out that there is little similarity between the acquisition order obtained through linguistic manipulation tasks and that obtained through communication tasks (Dulay, **et al.**, 1982:22; Larsen-Freeman, 1975). It is thus clear that a comparison between two learning orders cannot be based on data from different types of elicitation tasks. However, with regard to the purpose of the present study, it was intended at the very beginning to apply the method of hierarchical analysis to search for an overall hierarchy of learning English interrogative structures by Chinese learners without detailed comparisons with the learning order revealed in other studies since previous studies in

this area have not focussed on so many basic interrogative structures of English for an overall acquisition order. Therefore, the observed hierarchy in this study can only be claimed for the elicited written data.

Although the written data may remain a limitation, the results of the analysis has revealed a tentative order of difficulty for learning the basic interrogative structures of English. This learning order has, nevertheless, revealed a relationship between learning and the intrinsic complexities of English structures. It has also provided very useful sources of reference for the discussion of the transitional patterns and has confirmed certain findings of other studies.

When using the same data for the second purpose of the study, the search was for some transitional patterns underlying the learning of the basic English questions. A similar question may be raised about the nature of the data. Most of the previous reports on the learning of English interrogative structures were based on data collected from natural observation or structured oral communication. The elicited written data may thus pose a practical question for the comparison between the results of the present study and other reports.

It may be argued that the patterns resulting from the written data may not be comparable with steps or stages revealed for the L1 and L2

development of English questions. However, it was assumed that the Chinese students might appear to be more willing to write than to speak in such a linguistic investigation as a result of the tradition of teaching and learning English in China[3]. Therefore, written mode might be used to elicit the learners' knowledge of English structures. Speed factor was also controlled in the presentation of the translation task in order to force the subjects to attempt at the structures investigated. This might minimize the factor of monitor. On this basis, it was assumed that comparison between the results of the present study and other previous reports might be possible.

We must also admit that the written data based on isolated sentences cannot reveal certain developmental features that can be revealed only through contextualized oral data. For example, it has been reported in other studies, that in the development of Yes-no questions, L1 and L2 learners seem to pass an early stage in which questions are only marked by intonation but without subject and auxiliary inversion. Though the written data of the present study also noted sentences marked by "?" but without subject and auxiliary inversion, we can only assume that such uninverted sentences used as questions are likely to reflect a step similar to the early stage where Yes-no questions are marked by intonation only. It

is thus speculated that, if the Chinese learners were required to produce oral responses, they may produce intonation questions (without subject and auxiliary inversion) at such a stage. However, this is mere speculation (though personal experience tells us that Chinese beginning learners of English do produce such intonation questions in their speech). Therefore, this may remain a limitation of the research but may also serve as a topic for further research.

Notes

1. In the discusssion in this thesis, the terms **learning** and **learned** in most of the contexts have the implication of **having mastered sth.** Thus, in many cases, if a learner is said to have learned a grammatical structure of English, he is considered to have mastered the structure.

2. According to Clark and Clark (1977), **formal complexity** (or **structural complexity**) is not yet very well defined. However, they discuss the differences in formal complexities among different classes of English questions in terms of the devices used to express the questions (Clark and Clark, 1977:354, 338). The discussion here is based on their observation concerning formal complexities in the linguistic devices used in English questions. (cf. Clark and Clark, 1977:337-339, 351-354.)

3. In an article discussing the tradition of English teaching in China and its underlying cultural principles and philosophy, Yu Chen-chung (1984) has observed that,

> "Chinese students of English tend to prefer teacher-centered classroom activities to student-centered ones. They often ask for more lectures by their teachers. The students, especially

adult learners, are so bound by the traditional way of learning that some of them feel uncomfortable with more humanistic approaches suggested by many modern language teaching methodologies" (Yu, 1984:29).

"By learning, the Chinese tend to mean the accumulation of knowledge and the reading of books rather than the practical process of using knowledge" (Yu, 1984:35).

In most English classes in China, particularly those of secondary schools and English programmes for learners other than college English majors, emphasis is laid upon reading and the explanation of grammatical rules, vocabulary items and language points. Students would prefer written homework rather than oral activities in the classrooms. Therefore, it was assumed that it would be much more difficult to ask the subjects to respond orally than to give responses in writing in this investigation.

Chapter 6

Conclusions

6.1. Major Findings of the Research

The twofold purposes of this research seem to have been fulfilled with the findings of a tentative hierarchy for learning the basic interrogative structures of English by Chinese EFL learners and certain transitional patterns comparable to the transitional steps or stages in L1 and L2 acquisition of English questions revealed in other studies. This has enabled the present study to draw the following conclusions regarding the general patterns of learning English questions by Chinese EFL learners.

(1) The hierarchy for the seven basic structures of English questions indicates that there may be a predictable sequence among Chinese learners in learning the basic structures of English questions. Such a sequence is chiefly a result of the differences in syntactic complexity of the structures (see Chapter 5). This tends to reveal that the Chinese language as a source of interference does not play a major role nor does the sequence of exposure to the structures produce decisive effects in the process of learning the basic interrogative structures of English.

(2) The examination of the errors in terms of transitional patterns in

the three major question classes has revealed several tendencies in the development of inversion; i.e.:

a) There is a tendency indicating that, in any question class, the learners' question forms gradually developed from non-inversion to target-like inversion of the subject noun phrase and the operator.

b) The learning of inversion tended to develop first in Yes-no questions, then extend to Wh-questions and later to Alternative questions.

c) The above patterns, a) and b), appeared generally to correspond to the transitional patterns for L1 and L2/FL learning of English questions.

(3) Another important finding of this research is that errors reflecting the incorrect use of auxiliaries as question operators appeared to be more advanced errors as compared with the errors reflecting non-inversion. This also implies that these two types of errors tend to characterize two different stages of development.

Theoretically, the above findings tend to support theories that claim universal processes in first language, second language and foreign language learning. The tentative hierarchy for the interrogative structures suggests that the formal complexities of a language may be reflected in a

natural order of learning the structures. In other words, the learners of a language tend to learn the simplest structures first and work up to more complex ones later (Clark and Clark, 1977:337).

Non-inversion as a kind of error in the development of English question forms seems to reflect the special use of the operating principles (Slobin, 1973) guiding the search for grammatical markers that underlie semantic distinctions clearly and make semantic sense. This is revealed in the learners' attempt to find a grammatical marker to indicate that a question is a question (Clark and Clark, 1977:354; see also discussion in Chapter 5). The type of errors reflecting the incorrect use of auxiliaries as question operators, seem to reveal a similar operating principle in use. Such an operating principle involves the mapping of ideas onto language (Clark and Clark, 1977:340). In this case, the learners tended to randomly use grammatical devices such as auxiliaries used as operators to mark questions.

6.2. Implication for EFL Teaching in China

What are the implications of this research for teaching English in China? To answer this question, we may start with a discussion of what the study does not tell us about the teaching of English in classrooms. For

instance, it might be suggested that the proposed sequence for learning the interrogative structures of English may serve as the order for presenting the structures to learners. That is to say, those structural items that appeared to be learned earlier (later) should be taught earlier (later). If this is the case, then we have simply answered the question. However, the whole matter is not as simple as this.

First of all, it must be clear that the original purposes of the research were to explore the learners' processes of learning the structures and some possible reasons underlying the processes. In other words, the research was done with the intention of knowing what learners do in their language learning tasks and why. The starting point was not related to what to teach. To answer the question of what to teach may require further studies. Therefore, any inferences about what to teach from this study can only be indirect ones.

The second consideration is that, in language teaching, the structural aspect is only one of the factors to be considered for the selection of the contents of a course and the sequence of presenting them. For example, more recent developments in language teaching have focussed on the communicative use of language rather than on the sequencing of language forms. In communicative language teaching, the emphasis is on language

use rather than on language form, resulting in a focus on different language forms as needed by the learners to meet specific communicative needs. However, it is not our present position to discuss the different approaches to language teaching. It is quite sufficient to realize that an answer to the question of what to teach cannot rely only on a structural basis. Therefore we may give a negative answer to the question of what to teach.

If it is true that the results of the study cannot directly be applicable to language teaching, then what can we expect from these results? As has been pointed out, the implications may be indirect ones. As far as classroom teachers are concerned, the findings of the study may at least help them realize two aspects. First, they can be more realistic about what they can do with the learners in the classroom. If they know more about the learners' learning process, particularly more about the structural difficulties learners have to experience at different stages of learning, they may more accurately anticipate what they can achieve in the classroom. This may remove some of the anxiety associated with the fact that certain things which have been "covered" by the teacher or a text have not actually been mastered. Second, if they know about the route learners are likely to take, they might be in a better position to cope with learners'

errors. For instance, many foreign language teachers care too much about learners' grammatical errors. Teachers in China are apt to expect the learners to produce "faultless" sentences after the students are "taught" the structural items. Therefore, if these teachers know that, at certain stages, the leaners may not be ready for certain structures, they may better adjust their responses and attitude towards learners' errors. Or, at a practical level, they may even make choices about whether to correct learners' errors or to allow learners to have further exposure to language data. (cf., Lightbown, 1985.).

6.3. Suggestions for Further Research

Although the study has identified come characteristic patterns underlying the processes of learning English interrogative structures by Chinese learners, the results have been based on rapidly elicited written data. Such limitations (discussed in Section 5.4.) have therefore suggested that it is desirable to have further research based on oral data . Though such a study may require much greater efforts and much more time, it will enable the future results to supplement the findings of the present study and thus further contribute to the theories about the universal processes in second language learning from a different perspective.

A second suggestion concerns further study of the use of auxiliaries as operators in English questions. It has been found in this research that the inappropriate use of auxiliaries as question operators is a kind of error that occurs at a more advanced level as compared with errors reflecting non-inversion. However, the study has only identified the patterns reflecting the confusion between the use of auxiliaries BE and auxiliaries DO. It appears that the substitution of one auxiliary for the other when forming Enlgish questions is not random. Therefore, it seems that further research into the use of different auxiliaries as operators in questions may provide useful information for a better understanding of the learners' system of using auxiliaries in the development of English questions.

A third suggestion concerns aspects of English syntax other than the question forms. The present study on the Chinese EFL learners' transitional question forms was based on the assumption that the learners' interlanguage syntax could be broken down into various aspects for study. Eventually, results of studies on different aspects of syntax might be brought together for a more unified understanding of interlanguage syntax. Thus, if this is feasible, similar studies may be extended to other aspects of syntax such as the learning of negation, clause structures, tense and

aspect, pronouns, etc., since very little has been done in such areas about the learning of English as a foreign language in the Chinese context.

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Appendix I

A Description of English Interrogative Structures

A description of the English interrogative structures yielded the following sentences to represent different structural types of English questions. These sentences were later translated into Chinese and pre-tested in a pilot study to see if they could be translated back into English (see Section 3.3). The Chinese sentences were then randomly ordered in the translation task (see Appendix II). The following is an illustration of the English interrogative structures.

I. Yes-no Questions

A. General Questions

Am + Subject (S) + Adjective (Adj) or Noun (N) X ?

(X here stands for the rest of the sentence)

1. e.g., Am I taller than he?

Is + S + Adj (N) X ?

2. e.g., Is he your best friend?

Are + S +Adj (N) X ?

3. e.g., Are they Northerners?

Is + S + V-ing X ?

4. e.g., Is she talking with her brother?

Are + S + V-ing X ?

5. e.g., Are you writing to your friend?

Is + there + N X ?

6. e.g., Is there any store nereby?

Are + there +N X ?

7. e.g., Are there many foreign teachers in your school?

Have + S + N X ?

8. e.g. Have you any English dictionary here?

Has + S + N X ?

9. e.g., Has he any friends in the States?

Have + S + V-ed X ?

10. e.g., Have you visited that beautiful city?

Has + S + V-ed X ?

11. e.g., Has your sister passed the examination?

Shall + S + V X ?

12. e.g., Shall we go swimming on Sunday?

Will + S + V X ?

13. e.g., Will you come again on Sunday?

Do + S + V X ?

14. e.g., Do they play basketball every afternoon?

15. Do you like to speak Egnlish with foreigners?

Does + S + V X ?

16. e.g., Does he know English?

17. Does it often rain here in spring?

Did + S + V X ?

18. e.g., Did you buy that English dictionary yesterday?

19. Did you see the teacher just now?

Can + S + V X ?

20. e.g.,Can you see that girl over there?

May + S + V X ?

21. e.g., May I come to see you again next week?

Must + S + V X ?

22. e.g., Must you go right now?

B. Tag Questions

S + Operator (Op) + V + Negative-tag (Neg-tag) ?

23. e.g., The bus has left, hasn't it?

S + Op + Complement (C) + Neg-tag ?

24. e.g., He is very angry, isn't he?

S + Modal + V + Neg-tag ?

25. e.g., You can speak English, can't you?

S + V + (Obj) + Neg-tag ?

26. e.g., He works very hard, doesn't he?

S + Op-neg + C + Positive-tag (Pos-tag) ?

27. e.g., You aren' tired, are you?

S + Op-neg + V + Pos-tag ?

28. e.g., He doesn't like smoking, does he?

C. Negative Yes-no Questions

Op-neg + S + V X ?

29. e.g., Don't you go to school at eight everyday?

Op-neg + S + C

30. e.g., Isn't he clever?

II. Wh-questions

Who + BE + Pronoun (Pron) X ?

31. e.g., Who is that over there?

Who + V + Obj X ?

32. e.g., Who broke the window?

Who + DO + Pron + V X ?

33. e.g., Who did you give the letter to?

Whose + N + BE X ?

34. e.g., Whose book is this?

When + BE X ?

35. e.g., When is your birthday?

When + DO X ?

36. e.g., When did you tell him that?

What + BE X ?

37. e.g., What are your parents?

What + DO X ?

38. e.g., What did you tell him?

Where + BE X ?

39. e.g., Where is the bus stop?

Where + DO X ?

40. e.g, Where did he go last summer?

Which + DO X ?

41. e.g, Which foreign language do you learn?

Why + BE X ?

42. e.g., Why is he so happy?

Why + DO X ?

43. e.g., Why do you come back so early?

How + BE X ?

44. e.g., How is your father now?

How + DO X ?

45. e.g., How do you learn English?

How many + DO X ?

46. e.g., How many days do you work in a week?

Why + DO-neg X ?

47. e.g., Why didn't you go to see the film?

Why + BE-neg X ?

48. e.g., Why isn't he interested in sports?

III. Alternative Questions

49. Are we going to town by bus or by bike?

50. Are you coming or not tomorrow?

51. Do you prefer coffee or tea?

IV Embedded Questions

Embededd (Emb) Yes-no question (with operator)

52. e.g., I don't know whether he is an American (or not).

Emb Yes-no Questions (no operator)

53. e.g., I don't know if he goes home every day.

Wh-question (with operator)

54. e.g., Please tell me when he will return.

Wh-question (no operator)

55. e.g., I don't know why he works so hard.

Appendix II

The Translation Task

The translation task consisted of 59 sentences among which 4 statements (*in italics*) were included for distracting purpose. This was intended to distract the subjects from the feeling that any sentence they heard was an interrogative sentence. Actually, the 4 Embedded questions (**boldfaced**) included in the test might also serve the purpose.

1. 我是个英语学生。
(*I am a student of English.*)
2. 你会说英语，不是吗？
(You can speak English, can't you?)
3. 你刚才见到老师了吗？
(Did you meet the teacher just now?)
4. 他懂英语吗？
(Does he know English?)
5. 他们是北方人吗？
(Are they from the North?)

6. 他很努力工作，不是吗？
(He works very hard, doesn't he?)

7. 你喜欢和外国人说英语吗？
(Do you like to speak English with foreigners?)

8. 他为什么对运动不感兴趣？
(Why isn't he interested in sports?)

9. 你什么时候和他说过这件事？
(When did you tell him that?)

10. 昨天你买了那本英文词典吗？
(Did you buy that English dictionary yesterday?)

11. 他刚才还在看电视。
(*He was watching TV just now.*)

12. 他在美国有朋友吗？
(Has he any friends in the States?)

13. 我们星期天去游泳好吗？
(Shall we go swimming on Sunday?)

14. 你跟他说了些什么？
(What did you tell him?)

15. 我不知道他是不是每天都回家.

(I don't know if he goes home every day.)

16. 去年夏天他到那里去了?

(Where did he go last summer?)

17. 他是你最好的朋友吗?

(Is he your best friend?)

18. 什么时候是你的生日?

(When is your birthday?)

19. 你能看見那边那个女孩子吗?

(Can you see that girl over there?)

20. 你们一星期工作多少天呢?

(How many days do you work in a week?)

21. 你的父母是做什么的?

(What are your parents)

22. 我一本英文书也没有.

(I haven't any English book.)

23. 他很生气,不是吗?

(He is very angry, isn't he?)

24. 他正在和他弟弟说话吗？

(Is he talking with his brother?)

25. 你参观过那个美丽的城市吗？

(Have you visited that beautiful city?)

26. 你为什么不去看电影呢？

(Why didn't you go to see the film?)

27. 我下星期还可以再见你一次吗？

(May I come to see you again next week?)

28. 你把信交给谁了呢？

(Who did you give the letter to?)

29. 你星期天再来好吗？

(Will you come again on Sunday?)

30. 春天这里经常下雨吗？

(Does it often rain here in Spring?)

31. 你为什么这么早回来呢？

(Why do you come back so early?)

32. 你一定得现在走吗？

(Must you go right now?)

33. 公共汽车站在那里？

(Where is the bus stop?)

34. 你明天来，还是不来？

(Are you coming or not tomorrow?)

35. 你父亲目前身体怎样？

(How is your father now?)

36. 你难道不是每天都八点钟上学吗？

(Don't you go to school at eight every day?)

37. 公共汽车已经走了，是吗？

(The bus has left, hasn't it?)

38. 那边那个人是谁？

(Who is that over there?)

39. 附近有商店吗？

(Is there any store nearby?)

40. 你这里有英文词典吗？

(Have you any English dictionary here?)

41. 他不喜欢抽烟，是吗？

(He doesn't like smoking, does he?)

42. 他经常说话说得很慢。

(*He often speaks slowly.*)

43. 谁打烂窗户的呢？

(Who broke the window?)

44. 我不知道他为什么这么努力学习.
(I don't know why he works so hard.)

45. 他难道不聪明吗?
(Isn't he clever?)

46. 你学的是那一门外语?
(Which foreign language do you learn?)

47. 他为什么这么高兴呢?
(Why is he so happy?)

48. 你不累,是吗?
(You aren't tired, are you?)

49. 我比他高吗?
(Am I taller than he?)

50. 请你告诉我他什么时候回来.
(Please tell me when he will come back.)

51. 你正在给朋友写信吗?
(Are you writing to your friend?)

52. 你妹妹已经通过了这次考试吗?
(Has your sister passed the examination?)

53. 这是谁的书呢?
(Whose book is this?)

54. 他们每天下午打蓝球吗?
(Do they play basketball every afternoon?)

55. 你怎样学习英语呢?
(How do you learn English?)

56. 我不知道他是不是个美国人。
(I don't know whether he is an American.)

57. 我们进城去是乘公共汽车还是骑单车?
(Are we going to town by bus or by bike?)

58. 你们学校有许多外国老师吗?
(Are there many foreign teachers in your school?)

59. 你喜欢咖啡还是喜欢茶呢?
(Do you prefer coffee or tea?)

Appendix III

Sentences Analysed in the Present Study

The description of English interrogative structures in Appendix I and the resulted translation task (Appendix II) also included Tag questions and Negative questions. However, they were not included in the final data analysis. The reason for excluding Tag questions and Negative questions from the analysis and discussion was that such questions involve the syntactic aspect of negation and might thus bring in certain problems for the comparison between different question types. As the author became more aware of the complexities of the analysis, it was decided to further limit the scope of this study. Therefore, the present study only focussed on the learning of inversion and the use of BE and DO auxiliaries in forming English questions. Eventually only seven structural types of questions as defined in Section 3.3. were studied. The following are the sentences analysed for the learning hierarchy and the transitional patterns. The number before each sentence indicates its serial number in the translation task (see Appendix II).

A. Sentences for the Tree Analysis

I. Yes-no Questions (Aspect auxiliaries)

24. Is he talking with his brother?

25. Have you visited that beautiful city?

51. Are you writing to your friend?

52. Has your sister passed the examination?

II. Yes-no Questions (Copula/HAVE--Lexical verbs)

5. Are they from the North?

12. Has he any friend in the States?

17. Is he your best friend?

40. Have you any English dictionary here?

49. Am I taller than he?

III. Yes-no Questions (DO)

3. Did you meet the teacher just now?

4. Does he know English?

7. Do you like to speak English with foreigners?

10. Did you buy that English dictionary yesterday?

30. Does it often rain here in Spring?

54. Do they play basketball every afternoon?

IV. Wh-questions (DO)

9. When did you tell him that?

14. What did you tell him?

16. Where did he go last summer?

20. How many days do you work in a week?

28. Who did you give the letter to?

31. Why do you come back so early?

46. Which foreign language do you learn?

55. How do you learn English?

V. Wh-questions (BE)

18. When is your birthday?

21. What are your parents?

33. Where is the bus stop?

35. How is your father now?

38. Who is that over there?

47. Why is he so happy?

53. Whose book is this?

VI. Embedded Questions

15. I don't know if he goes home every day.

44. I don't know why he works so hard.

50. Please tell me when he will come back.

56. I don't know whether he is an American.

VII. Alternative Questions

34. Are you coming or not tomorrow?

57. Are we going to town by bus or by bike?

59. Do you prefer coffee or tea?

B. Sentences for the Analysis for Transitional Patterns

Yes-no Questions

3. Did you meet the teacher just now?

4. Does he know English?

5. Are they from the North?

7. Do you like to speak English with foreigners?

10. Did you buy they English dictionary yesterday?

17. Is he your best friend?

24. Is he talking with his brother?

30. Does it often rain here in Spring?

49. Am I taller than he?

51. Are you writing to your friend?

54. Do they play basketball every afternoon?

Wh-questions

9. When did you tell him that?
14. What did you tell him?
16. Where did he go last summer?
18. When is your birthday?
20. How many days do you work in a week?
21. What are your parents?
28. Who did you give the letter to?
31. Why do you come back so early?
33. Where is the bus stop?
38. Who is that over there?
46. Which foreign language do you learn?
47. Why is he so happy?
53. Whose book is this?
55. How do you learn English?

Alternative Questions

34. Are you coming or not tomorrow?
57. Are we going to town by bus or by bike?
59. Do you prefer coffee or tea?

Appendix IV

Sample Work Sheets for Scoring the Data

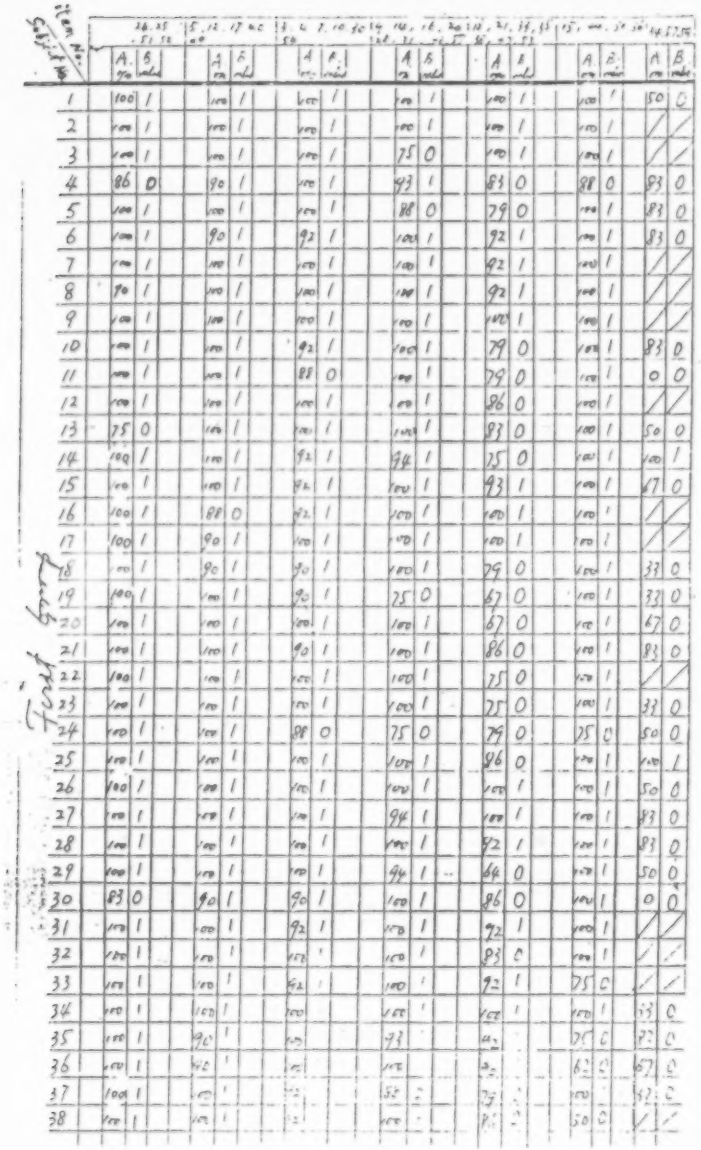
(Continued on next page)

Subject no. \ Item No.	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	Equated
1	1	2	1	2	2	2	2	2	X	2	2	2	2	2	2	104
2	1	2	2	2	2	0	2	2	1	2	2	2	1	2	2	108
3	1	2	0	1	2	2	2	2	2	2	2	2	0	2	0	106
4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	104
5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	104
6	2	2	1	1	2	0	2	2	2	2	2	1	2	2	2	104
7	1	2	2	1	2	2	2	2	2	2	0	2	X	2	2	104
8	2	2	1	2	2	2	2	2	2	2	2	2	1	2	2	104
9	2	2	1	X	2	0	2	2	1	2	0	2	2	1	2	106
10	2	2	2	2	2	2	2	2	2	2	2	2	X	1	2	104
11	2	2	1	2	2	2	2	2	2	2	2	2	0	2	0	108
12	2	0	2	2	1	2	0	2	2	2	2	2	X	1	2	106
13	X	1	1	2	2	2	2	1	2	1	1	2	0	2	0	104
14	0	2	2	2	2	0	2	2	2	2	2	2	0	1	2	108
15	2	2	1	2	2	0	2	2	2	2	2	0	2	2	2	110
16	2	0	1	1	1	2	2	1	0	2	2	2	2	1	2	108
17	2	0	2	0	2	0	2	1	1	1	1	X	2	2	2	98
18	2	2	1	2	2	2	2	2	1	2	2	2	0	1	2	106
19	2	2	2	1	2	2	2	2	2	2	2	2	1	2	2	96
20	1	2	1	2	2	2	2	2	1	2	2	2	0	1	2	106
21	2	2	2	2	2	0	0	2	2	0	2	X	1	2	2	100
22	1	2	1	1	2	0	2	2	2	2	2	2	2	2	2	98
23	1	1	1	2	2	2	2	2	2	2	2	2	1	1	2	100
24	X	2	2	1	2	2	2	2	2	X	2	2	0	0	0	100
25	2	2	1	2	2	0	2	2	2	2	2	2	0	2	2	106
26	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	106
27	1	1	2	2	2	2	2	2	1	2	2	2	0	1	2	106
28	2	2	0	2	2	2	2	1	0	2	2	2	1	X	2	98
29	2	X	2	1	2	2	2	2	1	2	2	2	2	2	1	92
30	1	X	X	1	2	X	X	X	X	2	X	X	1	X	2	64

| | | |

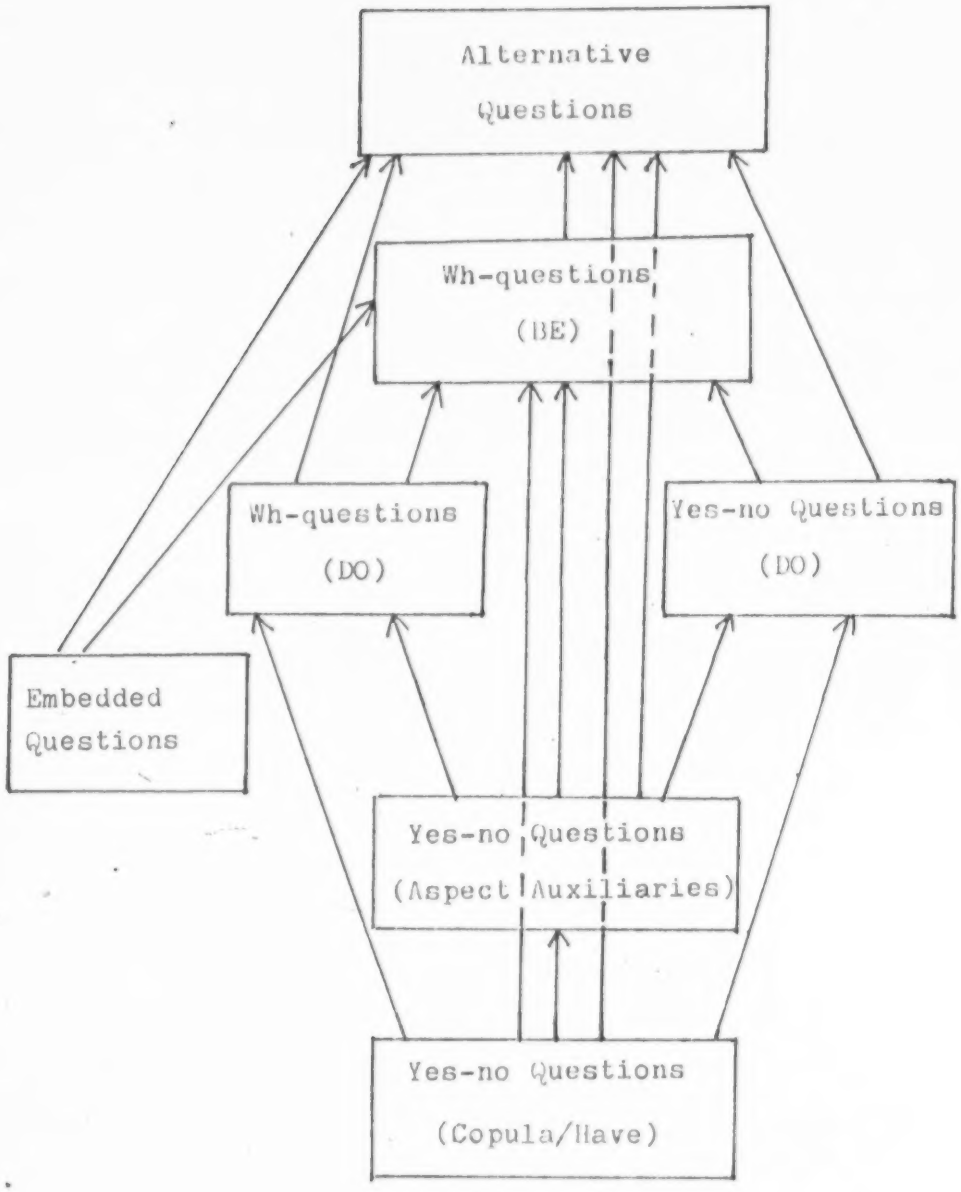
Appendix V

A Sample Work Sheet for Calculating Binary Values to the Structural Types



Appendix VI

A "Tree" Showing the Relationships Presented in the Matrix (Table 1)



Appendix VII

Samples of the Data

The following are the samples taken from the corpus of erroneous sentences produced by the subjects. Since many subjects made the same or similar errors under the same stimulus in the translation task, and the corpus would be too large to be included in this Appendix, only representative sentences of each type of error are included. For each type of stimulus the Chinese stimulus sentence and a possible English translation of the sentence are given. It is then followed by the samples of erroneous sentences. Therefore, the number of samples under each type of stimulus does not imply the actual percentage of the total erroneous sentences within the type. The number at the beginning of each stimulus sentence indicates its serial number in the test and the number following each erroneous sentence is a special number given to the sentence (to indicate the sentence number in the corpus and the number of the subject from whom the sentence is taken) for the author's personal reference only.

Yes-no Questions

3. 你刚才见到老师了吗？
(Did you see the teacher just now?)

Do you see the teacher just now? (18-2060)
Did you saw the teacher just now? (31-2003)
Are you meet the teacher just now? (60-2081)
Are you just see the teacher? (65-2073)
Were you met teacher just now? (84-2075)
Do you meet our teacher just now? (3-16-1016)
Just now, were you seen teacher? (3-17-1017)
See you the teacher --? (3-42-1042)
Just then does you see the teacher? (3-45-1045)
You just meet teacher? (3-53-1053)
Are you saw teacher? (3-63-1063)

4. 他懂英语吗？
(Does he know English)

Do he know English? (66-2074)
Does he you understand English? (82-2052)
Is he understand English?(63-2079)
Does he good at English? (4-15-1015)
Know he English?(4-32-1032)
Does he knew Egnlish? (79-2061)

5. 他们是北方人吗?

(Are they from the North (Northerners))?

Are they come from north? (16-2008)

Are he from the North China? (76-2082)

Do they the people of Northern? (5-5-1005)

Are they a man north? (5-36-1036)

Do they is from north? (5-48-1048)

7. 你喜欢和外国人说英语吗?

(Do you like to speak English with foreigners?)

Are you enjoy to speak English with foreign people? (56-2041)

Are you interesting with the foreign man talk the English (63-2079)

You like speak English with foreign language? (84-2075)

Can you like speak Egnlish with foreigners? (85-2076)

Are you like to speak Egnlish with foreigners? (7-13-1013)

Like you speaking English with --? (7-32-1032)

You like to speak English? (7-40-1040)

Are you speak English with --? (7-55-1055)

Does you like and -- speak English? (7-59-1059)

10. 昨天你买了那本英文词典吗？

(Did you buy that English dictionary yesterday?)

Were you buy that dictionary? (60-2081)

Have you bought the English dictionary yesterday? (77-2049)

Did you bought the English dictionary yesterday? (78-2070)

Are you bought the English dictionary yesterday? (83-2079)

Was you bought that English dictionary yesterday? (84-2075)

Were you bought that English dictionary yesterday? (10-13-1013)

Had you bought a English-Chinese dictionary? (10-23-1013)

Yesterday he had buy the English dictionary? (10-33-1033)

Do you buy a English dictionary yesterday? (10-36-1036)

Do you bought that English dictionary yesterday? (10-43-1043)

Do you had buy English dictionary? (10-45-1045)

Are you buy that dictionary (10-64-1064)

12. 他在美国有朋友吗？

(Has he any friends in the U.S.A.?)

Has he have friends in the U.S.A.? (35-2051)

Have he some friends in America? (36-2026)

Have he any friend in America? (74-2087)

He have a friend? (12-38-1038)

He has friend in U.S.A.? (12-53-1053)

He had friend in America? (12-64-1064)

17. 他是你最好的朋友吗？
(Is he your best friend?)

Does he one of your best friend? (40-2065)
Does he is your the best friend? (52-2067)
Is he is the best friend of your? (62-2071)
He is if you the best friends? (69-2069)
Did he was your best friend? (78-2070)
He is best friend of you? (83-2079)
Does he your best friend? (17-9-1009)
He is your friend? (17-48-1048)
He is good friend? (17-53-1053)

24. 他正在和他弟弟说话吗？
(Is he talking with his brother?)

Does he talking with his brother? (67-2047)
Is he speak with brother? (84-2075)
He is speaking with --? (24-32-1032)
Has he talking with his brother? (24-41-1041)
Does he is saying with her brother? (24-42-1042)
He is saying with her young brother? (24-48-1048)
Do you talking to your brother? (24-49-1049)
She speak telling brother now? (24-53-1053)

25. 你参观过那个美丽的城市吗?

(Have you visited that beautiful city?)

Were you visit the beautiful city? (56-2041)

Do you have visited that beautiful city? (77-2049)

Are you visited the beautiful city? (83-2079)

Have you been visit that beautiful city? (25-13-1013)

Do you have visited the city? (25-43-1043)

You visit this beautiful city? (25-53-1053)

Are you visit the city? (25-60-1060)

30. 春天这里经常下雨吗?

(Does it often rain here in Spring?)

Is it often rain in Spring here? (6-2063)

Is this always rained in Spring? (30-2030)

Do it rains always in Spring? (40-2065)

Does it often raining in here Summer? (54-2034)

It is often raining in Summer? (83-2079)

Are there raining very often there? (30-11-1011)

Here always rain in Spring? (30-25-1025)

It's always raining in a Spring? (30-63-1063)

40. 你這裏有英文詞典吗？

(Have you any English dictionary here?)

Have you had English dictionary? (54-2034)

Have English dictionary here? (56-2041)

Are there have English dictionary? (83-2079)

Have you have English dictionary here? (40-13-1013)

You have English -- in here? (40-58-1058)

Are you have English dictionary in there? (40-64-1064)

49. 我比他高吗？

(Am I taller than he?)

Do I taller than he? (4-2023)

Is I taller then her? (56-2941)

Is I tall than he? (60-2081)

Is I more taller than he? (49-12-1012)

Have I tall than her? (49-42-1042)

I'm taller than she? (49-54-1054)

I than you tall? (49-55-1055)

I must than he high? (49-64-1064)

51. 他正在给朋友写信吗?

(Are you writing to your friend?)

Is you writing a leeter to friend? (54-2034)

Does you write letter to your friend? (55-2044)

Do you writing a letter to him? (62-2071)

Does you writing a letter to the friend? (77-2049)

You are writing for friend? (51-21-1021)

Are you write a letter in here? (51-38-1038)

You are just writing a letter give your friend? (51-64-1064)

52. 你妹妹已经通过了这次考试吗?

(Has your sister passed the examination?)

Have your young sister passed this exam? (73-2088)

Does you sister had past this term? (77-2049)

Is you younger sister the test fail? (83-2079)

Was you sister pass the exam? (84-2075)

Did your younger sister had passed the exam? (52-28-1028)

Do your young sister pass this --? (52-30-1030)

You were sister pass the --? (52-44-1044)

You sister already pass? (52-53-1053)

54. 他们每天下午打蓝球吗？
(Do they play basketball every afternoon?)

Does they play basketball every afternoon?(16-2008)
Are they play basketball every afternoon? (65-2073)
They play basketball every afternoon? (54-21-1021)
Have you play basketball everyday? (54-55-1055)
We are going to play basketball in the afternoon? (54-64-1064)

Wh-questions

9. 你什么时候和他说过这件事？
(When did you tell him that?)

When you talk about this thing? (65-2075)
When you have said about it with him? (70-2019)
When are you told this thing to him? (80-2077)
When you tell him this thing? (82-2052)
When you speak this? (9-32-1032)
When are you tell him this thing? (9-37-1037)
When you say to about? (9-45-1045)
When you speak to him about it ? (9-55-1055)
When you say her the thing? (9-59-1059)

14. 你跟他說了些什么？
(What did you tell him?)

What do you have talk to him? (37-2059)
What you said with him? (65-2073)
What you talked to him? (69-2069)
What were you talked with him? (78-2070)
What were you talk with him about? (14-13-1013)
What you talk with them? (14-35-1035)
What are you said with them? (14-39-1039)
What you speak with her? (14-41-1041)
What you speak to him ? (14-55-1055)
What are you speak with he? (14-60-1069)

16. 去年夏天他到那裏去了？
(Where did he go last summer?)

Where he went last summer? (56-2041)
Where was he go last summer? (60-2081)
Where was he goes last summer? (73-2088)
Where he had go to last summer? (82-2052)
Where he was go last summer? (84-2075)
Last summer where he go? (85-2076)
Where does he go in the summer last year? (16-37-1037)
Where is he go to last year? (16-40-1040)
Where he going to in last summer day? (16-42-1042)

18. 什么时候是你的生日？
(When is your birthday?)

When are your birthday? (6-2036)

When do your birthday? (50-2038)

When was you born? (58-2058)

When does you your birthday? (61-2072)

When will your birthday? (68-2015)

When did your birthday? (81-2085)

When your birthday is? (82-2052)

When you were born? (18-33-1033)

When you are born (18-42-1042)

When was you birthday? (18-45-1045)

20. 你的一星期工作多少天？
(How many days do you work in a week?)

How many days are you work in a week? (19-2043)

How many days you work in a week? (55-2044)

How many time you work every day? (58-2058)

How many days you are work in a week? (77-2049)

How many days does you work every week? (20-4-1004)

How many you work a week? (20-30-1030)

How many work day you a week? (20-33-1033)

21. 你父母是做什么的？

(What are your parents?)

What does your parents? (10-2005)

What is your parents? (25-2065)

What are your parents do? (29-2062)

What your parents work? (85-2076)

what's are you your parents? (21-14-1014)

What you parents do? (21-33-1033)

What does you parents work? (21-48-1048)

28. 你把信交给谁了呢？

(Who did you give the letter to?)

Whom are you send the letter for? (44-2017)

Whom you give the letter to? (47-2048)

Whom were you send the letter? (52-2067)

Who you gave the letter? (56-2042)

Who you sent the letter? (58-2058)

Who you give the letter? (60-2081)

Who you have given the letter? (28-9-1009)

You letter give who? (28-53-1053)

Who are you gave the letter? (28-64-1064)

31. 你为什么这么早回来呢？
(Why did you come back so early?)

Why you come back so early? (4-2023)
Why were you come back early? (55-2044)
Why you came so early? (75-2029)
Why are you come back early? (84-2075)
Why you had come back early? (31-33-1033)
Why you come back very early? (31-43-1043)
Why you come in early? (31-50-1050)

33. 公共汽车站在那？
(Where is the bus stop?)

Where the bus stop is? (29-2062)
Where the public bus station? (79-2061)
Where does the bus stop? (80-2077)
Where are the bus stop? (83-2079)
Where're the public stop? (33-29-1029)
Where the bus stop? (33-42-1042)
Where the bus station? (33-50-1050)
Where the bus is? (33-57_1057)

35. 你父親的身体怎样？
(How is your father now?)

How about your father's health? (5-2016)
How does you father? (44-2017)
How has your father present? (54-2034)
How does your father's health? (55-2044)
How do your father healthy? (57-2035)
How yuur father's health? (76-2082)
How your father is? (82-2052)
How your father getting on? (35-16-1016)
How are your father? (35-18-1018)
How your father --? (35-38-1038)

38. 那边那个人是谁？
(Who is that over there?)

Who are that man? (41-2040)
Who the person over there? (59-2037)
Who does the man at there? (77-2049)
Who man are the other side? (83-2079)
Who there people? (38-43-1043)
Who the that man is? (38-57-1057)
Who the man --? (38-59-1059)

47. 他为什么这么高兴？
(Why is he so happy?)

Why she is so happy? (4-2023)
Why she such glad? (19-2043)
Why does he so happy? (23-2004)
Why he so happy? (24-2054)
Why did he so glad? (48-2038)
Why he is happy? (69-2069)
Why he very happy? (83-2079)
Why is he is glad? (47-47-1047)
Why has he very happy? (47-53-1053)
Why do he so happy? (47-60-1060)

46. 你学的是那门外语？
(Which foreign language do you learn?)

Which English are you learn? (35-2051)
Which foreign language is you study?(50-2063)
Which the language does you study? (55-2044)
What foreign language that you are studying? (56-2041)
Which language you learn? (58-2058)
Which foreign language you learned? (73-2088)
What is the language do you learn? (78-2070)
Which foreign language you study? (82-1052)
Which you study foreign language? (84-2075)

53. 这是谁的书呢？

(Whose book is this?)

Whose is this book? (10-2005)

Whose the book is? (52-2067)

It is whose book? (54-2034)

Whose the book? (68-2015)

Whose book this? (69-2069)

Whose book is? (73-2088)

Whose the book is? (79-2061)

Who book is? (85-2076)

55. 你怎样学习英语呢？

(How do you learn English?)

How you was learned foreign language? (67-2047)

How to learn English for you? (69-2069)

How are you study English? (73-2088)

How you study English? (75-2029)

How does you study English? (77-2049)

How to learn English about you? (55-7-1007)

How is you study English? (55-63-1063)

Alternative Questions

34. 你明天来还是不来？

(Are you coming or not tomorrow?)

You'll come twomorrow or you won't come? (1-2002)

Whether you come or not tomorrow? (9-2027)

Whether you will come or not tomorrow? (11-2033)

If you come here or not tomorrow? (13-2018)

Do you come or not tomorrow? (24-2054)

You come or not tomorrow? (40-2065)

You come tomorrow or the day after tomorrow? (45-2014)

You come here or don't tomorrow? (46-2009)

Tomorrow you'll come or not? (64-2006)

If you come tomorrow or not? (70-2019)

57. 我们进城去是乘公共汽车还是骑单车？

(Are we going to town by bus or by bike?)

We will go to city by bus or by bike? (11-2033)

We go to town by bus or by bicycle? (18-2060)

Are we by bus or bike when we to the city? (22-2066)

We are go to city, bu bus or by bike? (60-2081)

We come to town by bike or by bus? (80-2077)

We're going downtown by bike or by bus? (57-3-1003)

We going to town by bus or by bike? (57-49-1049)

59. 你喜欢咖啡还是喜欢茶呢？

(Do you prefer coffee or tea?)

You like coffee or tea? (11-2033)

Does you like coffee or tea? (55-2044)

Are you like coffee or tea? (56-2041)

You prefer coffee or tea? (38-1038)

Embedded Questions

15. 我不知道他是不是每天都回家。

(I don't know if he goes home everyday.)

I wonder how is he goes home every day. (73-2088)

I don't know he is come back everyday. (15-45-1045)

I don't know he has come home everyday. (15-48-1048)

I don't know does he go home everyday. (15-54-1054)

44. 我不知道他为什么这么努力学习。

(I don't know why he studies so hard.)

I don't know why does he study so hard. (38-2007)

I don't know why he working so hard at study. (70-2019)

I don't know why did he study hard. (73-2088)

I don't know why he was so hard study. (44-7-1007)

I don't know that why does he study hard. (44-35-1035)

Idon't know he study is hard. (44-45-1045)

50. 请你告诉我他什么时候回来。

(Please tell me when he will come back.)

Tell me when will he be back, please. (24-2054)

Please tell me when will he come back. (33-2031)

Please tell me when will he come. (39-2039)

Please tell me when did he come back. (77-2049)

Please tell me when did he return. (81-2085)

Would you tell me what time will he come. (50-17-1017)

Please tell me when does he come back. (50-21-1021)

Please tell me when is he back. (50-37-1037)

Please tell me when do he back. (50-42-1042)

56. 我不知道他是不是个美国人。

(I don't know if he is an American.)

I don't know is he an American. (73-2088)

I don't know if he American (83-2079)

I don't know if is he a American. (56-15-1015)

I didn't know if he a American. (56-17-1017)